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THE ILLUSTRATED POULTRY RECORD.

Edited by E. T. Brown

DEC. 1912



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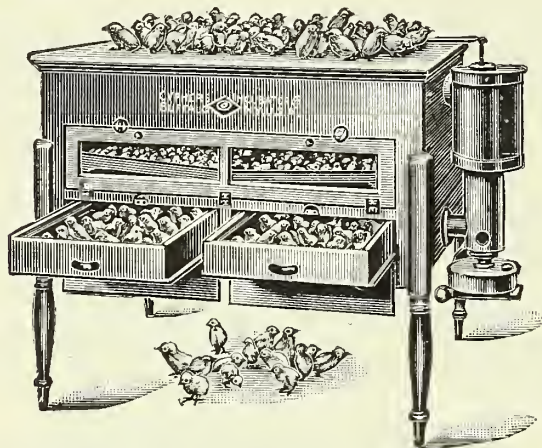
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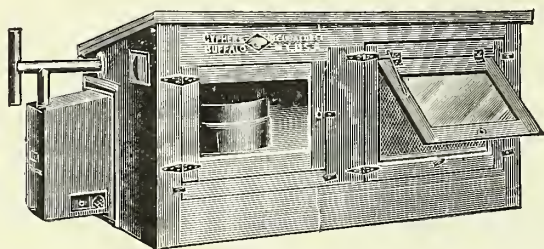
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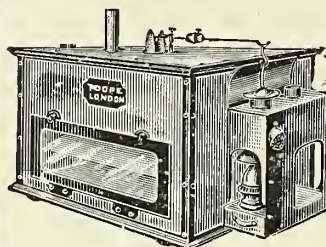
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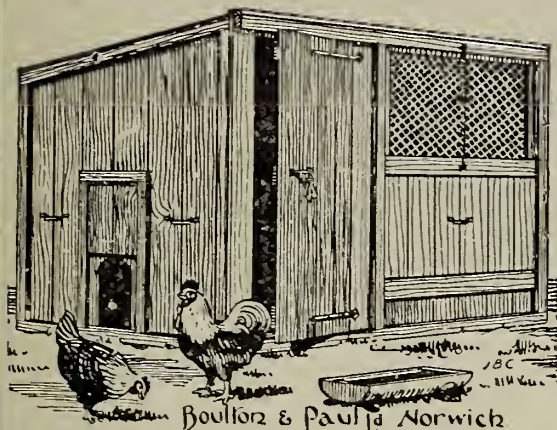


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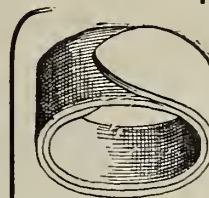
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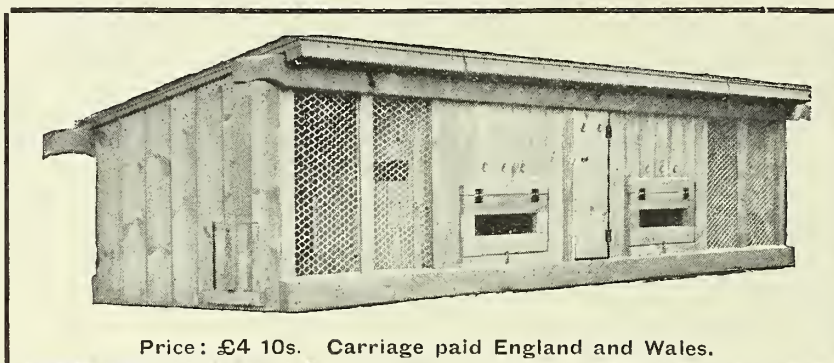
Oil consumption no greater than in old-fashioned single chamber type.

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IN SAME MACHINE.

The most practical and reliable rearer on the market combining utility with economy.
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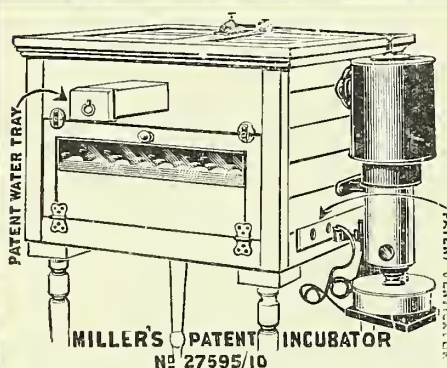
A few opinions

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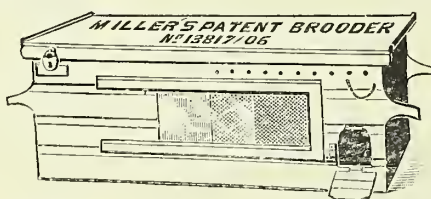
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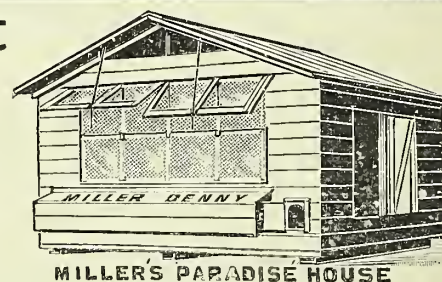
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Makes a perfect Colony or Field House, and as an Intensive House beats hollow every other English or American make.

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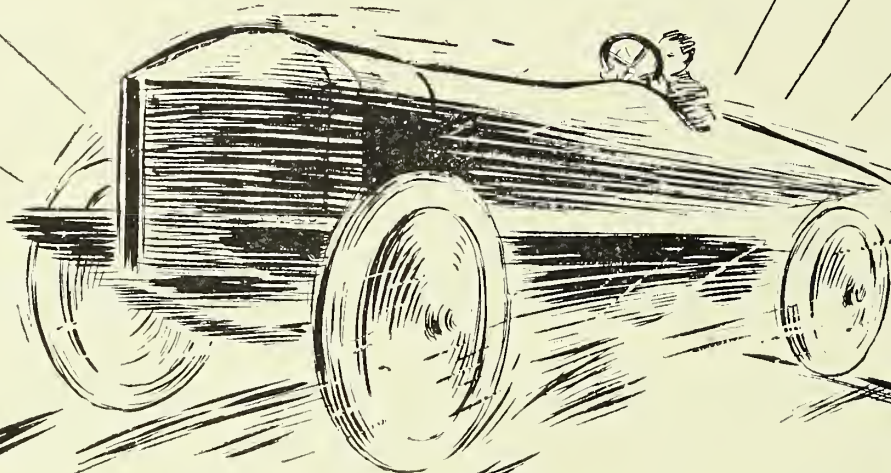
84,000 CHICKENS HATCHED IN 1912.

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“If you see it in ——— it is so”

We have told you for some weeks past, that eggs would be very dear. Present prices verify this forecast, and they will be still dearer yet, in fact dearer than in any previous Winter.

W H Y ?

Because the consumption increases, whilst the import of eggs decreases, and will still more owing to the Balkan War. Make your hens lay therefore by using our

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Free sample and price list, containing Hints on Feeding and a diagnosis of all poultry ailments with their cure.

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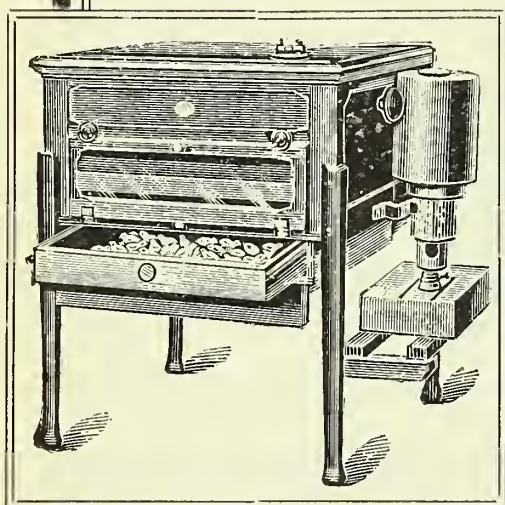
Makers of the Genuine Sussex Ground Oats.

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specially adapted ...

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The illustration depicts **OUR PATENT LAMP**, which holds sufficient oil for the whole hatch, and is a vast improvement on the self-fillers hitherto sold with incubators. It is permanently fixed in position, and the burner is attended to by withdrawing a slide to which it is fitted, to a convenient position in front of the incubator. Being made to contain a large body of oil, it is free from all risk of fire, as it is always cool, and as no vapour can be given off, there is no smell and no loss by evaporation, as is the case with small reservoirs which soon get heated. This lamp is supplied with any Gloucester Incubator without extra charge.

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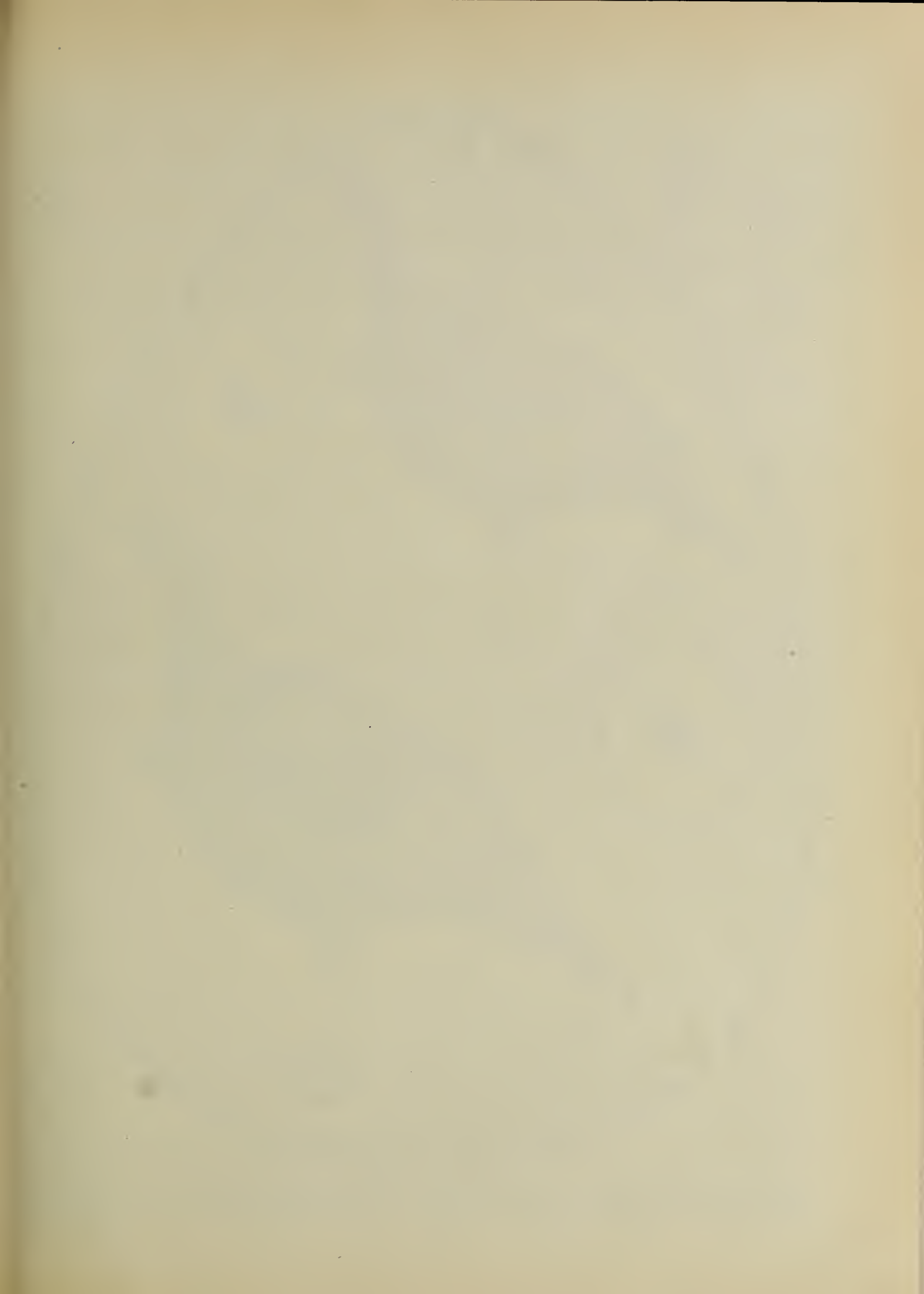
Our **PATENT REFLECTOR** will enable the Thermometer to be read with the greatest ease.

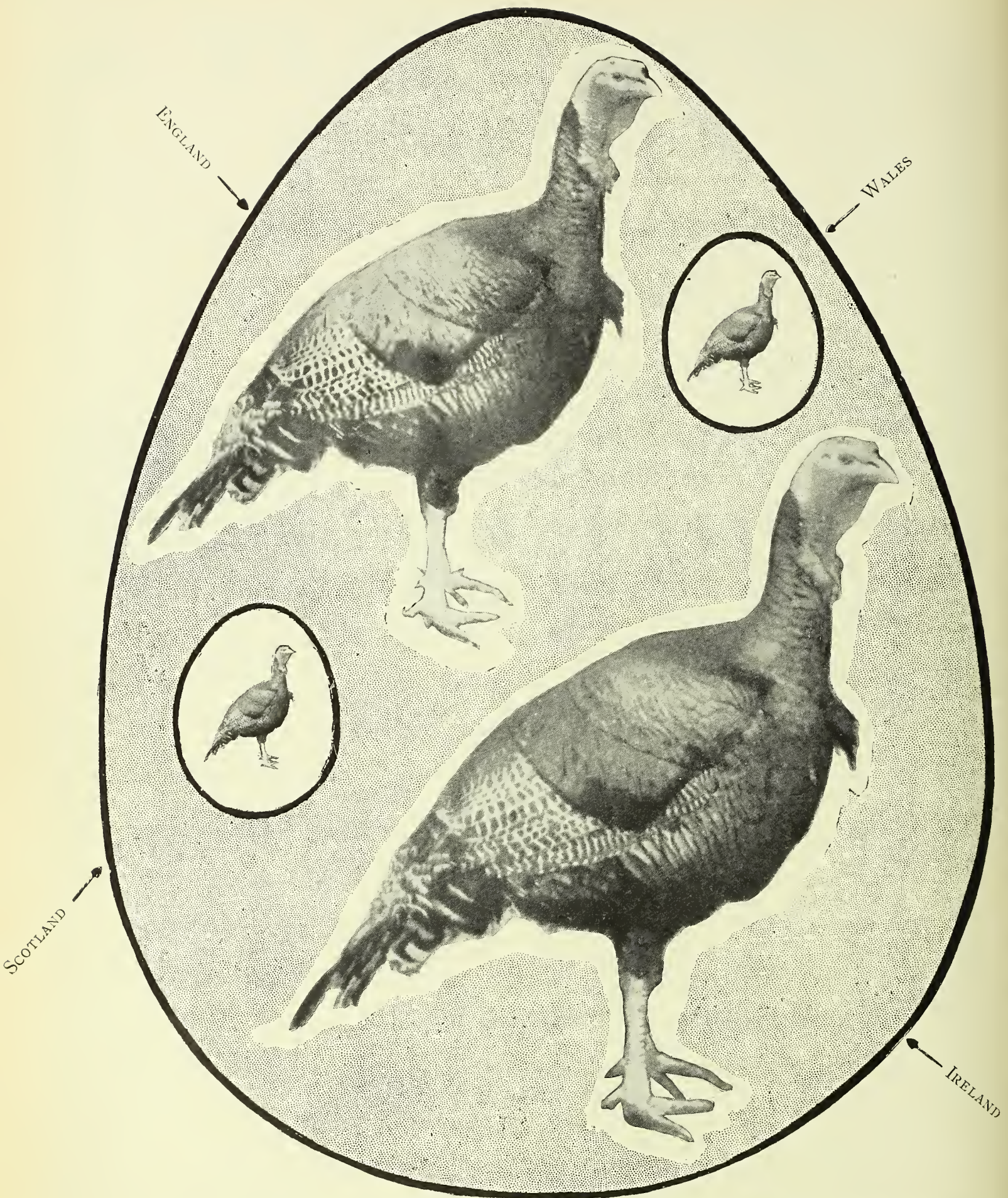
Our **PATENT AUTOMATIC DOOR CLOSING APPARATUS** automatically closes the door, after cooling, at any specified time in your absence without any attention on the part of the operator.

These improvements make the "Gloucester" an absolutely automatic Incubator, and places it a long way ahead of all others.

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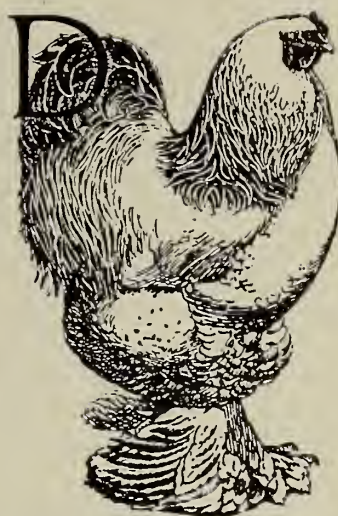
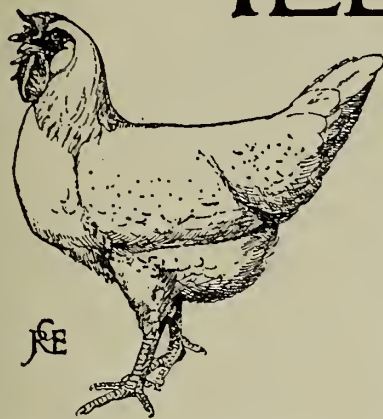
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RELATIVE PROPORTIONS OF ADULT TURKEYS IN THE UNITED KINGDOM. (See page 105). [Copyright.]

THE ILLUSTRATED POULTRY RECORD



Vol. V.—No. 3.

December 2, 1912.

Monthly, Price Sixpence.

DIARY OF THE MONTH.

EDITORIAL NOTICES.

Telegrams: "VIVACIDAD, FLEET, LONDON."
Telephone: CITY, 2083

The Editor will be glad to consider any MSS., photographs, or sketches submitted to him, but they should be accompanied by stamped addressed envelopes for return if unsuitable. In case of loss or injury he cannot hold himself responsible for MSS., photographs or sketches, and publication in the ILLUSTRATED POULTRY RECORD can alone be taken as evidence of acceptance. The name and address of the owner should be placed on the back of all pictures and MSS. All rights of reproduction and translation are reserved.

The Editor would like to hear from readers on any Poultry Topics, and all Queries addressed to the paper will be answered by experts in the several departments. The desire is to help those who are in difficulty regarding the management of their poultry, and accordingly no charge for answering such queries is made.

The Annual subscription to the ILLUSTRATED POULTRY RECORD at home and abroad is 8s., including postage, except to Canada, in which case it is 7s. Cheques and P.O.O.'s should be made payable to the ILLUSTRATED POULTRY RECORD.

The ILLUSTRATED POULTRY RECORD is published on the first of every month. Should readers experience any difficulty in securing their copies promptly they are requested to communicate immediately with the Editor.

The latest date for receiving advertisements is the 20th of the month preceding date of issue.

The utmost care is exercised to exclude all advertisements of a doubtful character. If any reader has substantial grounds for complaint against an advertiser he is requested to communicate at once with the Editor.

The Giant of Poultry.

It would almost appear from the rapid developments in south-eastern Europe that Turkey as a European nation is destined to disappear. Perhaps ere these words are read that result will have been achieved. We have, however, still with us the bird bearing that name. In spite of war and conquests our Christmas tables will be graced as usual by the poultry king, and it is more than likely that with the disappearance of Turkey-in-Europe as a political entity, there will be a vast increase in the production of the bird bearing that name throughout the Balkan States, for, as shown by Mr. Brown in an article published this month, the conditions are very favourable indeed to the breeding and rearing of that bird. In addition we give several articles, modern and otherwise, dealing with the turkey, and our cover fitly indicates that we have entered upon the month when it reaches the maximum of consumption.

Humanitarian Treatment of Poultry.

Several prosecutions have been recently undertaken for cruelty to poultry. With the details of these we are not at present concerned. The surprising fact is that owners of poultry should incur loss, which falls upon themselves, by overcrowding the birds in baskets and hampers. It might have been expected that the folly of it would be self-evident. Where shippers sell free on rail there may be some temptation in that direction, though, apart from ordinary ideas of humanity, such should not be possible. In the many aspects of cruelty to animals it is profitable, such as goose fattening for making *pate de foies gras*, bleeding calves, plucking feathers for ladies' hats, and some

classes of sport. That is not so in the cases under review, for the chances are great that the cruelty will eventuate in actual monetary loss. That there has been a great improvement within recent years is apparent, but it is equally true much remains to be done, and that the Act of Parliament passed last year (1 and 2 Geo. V. Ch. ii.), which we reproduce on another page, is required to defend poultry from unnecessary suffering. It may be hoped that wherever this Act applies, prosecutions will result, so that the practices referred to may be effectively stopped.

Justice and Mercy.

Our contemporary the *American Poultry* makes a powerful appeal that the suspension of Mr. Edward T. de Graff, passed by the American Poultry Association more than two years ago, should be rescinded, on the ground that he has been sufficiently punished, even though it may be generally accepted that the charge upon which action was based was fully justified. Whilst desiring to see "faking" in every form suppressed and those guilty of the practice made to suffer for their misdeeds, it is essential that justice shall be tempered with mercy, otherwise there is always a reaction. Unfortunately Mr. de Graff acted unwisely in what he said and did when the charge was made, on the ground that others were equally guilty. That, however, is no justification, though it may be an excuse. We should be glad to share in this appeal, which is emphasised by the fact that of the many who have had business relationships in this country, we have not heard any speak in other than the highest terms of his straightforward dealing. As a breeder he has had a remarkable record, and what he has done for Rhode Island Reds cannot be told.

Colonial Supplies.

The problems of producing countries are totally different to those where consumption is greatest. We have noted previously the small supplies which reach this country from British Colonies, in which demand appears to grow equally with production, so that there is no margin for export. That is so in New Zealand, a country which appears to be specially favoured by its conditions. Complaints are made that the export trade lacks organisation and encouragement. As a consequence, during a recent visit of the Prime Minister of the colony to Wellington, a deputation of poultrymen waited upon him to urge the increase of educational facilities in this subject, and for taking steps for placing the overseas trade on a satisfactory basis. It is stated that the time is fast approaching when the production will be greater than the Colonial consumption, in view of which provision for dealing with the surplus must be

made. We are glad to know that the suggestions of the deputation received careful attention.

The Murdered Prime Minister.

The assassination of Señor José Canalejas, Prime Minister of Spain, would have commanded much greater attention but for the absorption of European nations with problems in the Balkans. It is a foul deed, and universal sympathy is felt for his family and the Spanish nation. It is not generally known that he took considerable interest in, and did much to help, the poultry industry in his country. We had the privilege of meeting him in Madrid and can speak of his recognition of the importance of this branch of agriculture. He, the then Minister of Agriculture, contributed largely to the success of the great International Poultry Exhibition held in Madrid a few years ago, under the direction of Señor Castello, of Barcelona. As we can testify, he was constantly at the show. It was he who presented the foreign delegates to the King and Queen-Regent, and his luncheon to them at the Agricultural College, Mancloa, will be recalled by those who were permitted to share his great hospitality with a sadness to think that he has fallen a victim to the assassin. Knowing something of his sterling character and his interest in our industry, we desire to pay this tribute of respect to his memory.

The Crystal Palace Show.

The greatest exhibition of poultry ever held in this or any other country was that which took place at the Crystal Palace last month. It was the eleventh Grand International Show held on the 12th, 13th, and 14th ult., and so far as entries were concerned it was a record event, there being on view nearly eight hundred more fowls than at last year's fixture, while there has never been a better collection of birds from a quality point of view.

In the poultry section alone there were well over 7,000 entries, and they comprised thirty-three distinct breeds, and at least 117 varieties of fowls, twenty-three breeds and not less than sixty-three varieties of bantams, twelve breeds and more than fourteen varieties of ducks, two breeds and varieties of geese, and a similar division for turkeys, while in addition there were others in the classes for breeding-pens, four breeds and fifteen varieties of Belgian Bantams, and thirty-six entries in the six classes for poultry appliances. Another breed of fowl were catered for, viz., the Gatinais, and twenty-four pens were allocated to them in two classes; but, for some reason, none turned up, and apparently none had been entered, since no names of exhibitors were given against the numbers in the catalogue. However, it did

not in any way interfere with the grand total for the poultry section, since there were sufficient "a" numbers in the list to take their place.

The Champion Birds.

It is hardly possible for us to say much, if anything, about the many splendid specimens of poultry which were staged at the Palace, and, unfortunately, owing to the surcharged state of our columns this month, we have been compelled to omit our usual résumé of the event. Mention, however, must be made of those fowls competing for the championships, since each had the honour of being adjudged the best in its section, and they had to be judged as two classes—no light task, as can be imagined—for the chief awards—viz., "Best in Show."

In the one class the cocks and cockerels were Messrs. George H. Procter's Buff Cochins, W. Smith-Lambert's Golden Laced Wyandotte, W. Bradley's Black Minorca, D. Wishart's Black Red Modern Game, J. E. Harper's Black Modern Langshan, H. Ainscough's Black Red Modern Game Bantam, and J. and W. Robinson's Spangled Old English Game Bantam.

The hens and pullets were Miss Le Patourel's Buff Orpington, and Messrs. A. E. Ward's Light Brahma, J. Brennand's Silver Grey Dorking, William Cook and Son's Blue Orpington, W. Bradley's White Leghorn, H. Platt's Andalusian, John Taylor's Barred Plymouth Rock, C. H. Britton's Indian Game, S. Joyce's Brown Red Old English Game, and A. R. Fish's Black Rosecomb Bantam. These birds were penned one tier high in an ante-room and the awards were made by Messrs. T. Lambert, R. Stainthorpe, and W. W. Broomhead. The Challenge Shield for the best cock or cockerel was won by Mr. W. Smith-Lambert's Golden Laced Wyandotte; the Challenge Trophy for the best hen or pullet, by Mr. John Taylor's Barred Plymouth Rock; and the Challenge Cup for the best of either sex, Mr. Taylor's Plymouth Rock hen, which, we are given to understand, is the first time that a bird of this breed has secured the premier award at the Crystal Palace.

Some Novelties.

Catering, as the executive does, for most breeds in separate sections, it can be imagined that any new variety which appears at the Palace must do so in "the tail end"—the "Any Other Variety" classes, or in those for "Any Other Colour." Among others we noticed this year was a pair of "Copper" Wyandottes, the male bird reminding one somewhat of a Golden Duckwing, decidedly pretty, though lacking in Wyandotte shape, while the female was not so attractive, having the body colour of a Salmon Faverolles with black ticking on the hackle. However, in classes containing White-Laced

Bufs, Spangles (black and white), White-Laced Blacks, and Blue-Laced Bufs each of "the very latest"—the Copper—was awarded a reserve card and equal in this case to a fifth prize.

In the classes for Cuckoo-Orpingtons we noticed that a Dutch fancier had entered a pair of really good Barred, but the birds failed to catch the judge's eye, which is not surprising, since the two markings, Cuckoo and Barred, are quite distinct. In the "Any Other Variety" classes were such old breeds as White Dorkings, Black Spanish, Creve Cœur, and Redcaps—all enjoying a great vogue in exhibition circles in bygone days, but now passed over for more useful kinds—as well as the newer Lakenfelder, White Langshans, Partridge Orpingtons (direct from California), and "Apteryx Feathered"—none other than silky-plumaged Langshans. A pair of Sicilian Buttercups had been entered, but they failed to put in an appearance, having landed on this side—they hail from America—too late to allow of their being penned.

In one of the breeding-pen classes, for a cock or cockerel and two hens or pullets, there was something new in the Plymouth Rock line in the shape of two pens of Silver Laced, but they were the only two entrants that did not get a card. We cannot say that the birds were at all striking in appearance, since no two were alike, and we failed to find a single laced feature in the six specimens staged. In the Silkie classes there was one for any other colour than White, and here, in addition to Blacks, were some samples of a new variety—viz., Partridge. Truly this craze for something new is on the increase, although it seems a great pity that some of the new varieties do not conform more to the general characteristics of the breeds they are supposed to represent. One of the Partridge Silkies on view was muffled like a Faverolles, while another had a red comb and was decidedly defective in foot furnishing. The Blacks were quite good.

OUR SPECIAL ILLUSTRATIONS.

We are indebted to Messrs. Abbott Brothers for the excellent illustration of an American Bronze Turkey which forms our front cover this month. The firm of Abbot Brothers is well known throughout the poultry world for the excellence of its poultry. The turkey reproduced on the front cover is a winner of many prizes, and it has been acknowledged to be one of the most typical birds ever bred. Many of the illustrations in the present issue were taken upon Mr. Gage Harper's farm in Hadleigh, Suffolk, one of the most successful exhibitors and breeders of turkeys in the country. Not only does Mr. Gage Harper do a large home trade, but he exports birds to all parts of the world.

SELECTION AND BREEDING OF TURKEYS.

What should be looked for in the Stock Birds.

BY EDWARD BROWN, F.L.S.

Professor Eugene Davenport, in his "Principles of Breeding" says:—

"It has become a proverb that the sire is half the herd. He is far more than that. He is half of the first generation, three-quarters of the next, seven-eighths of the third, and so on, until, if judicious selection be maintained for a few generations, the character of the herd will be fixed by the sire alone."



WHAT is true in connection with animals is equally so as to poultry. That fact, however, is frequently overlooked. In many cases farmers who will apply most rigidly scientific principles in the breeding of horses, cattle and sheep, ignore these almost entirely in respect to their poultry. For that there is no excuse whatever. Hence, as shown below, we cannot expect anything better from some classes of poultry-keepers, who are not cognisant of the higher laws which govern live stock, but such cannot be claimed by farmers who take up turkey raising, for they are usually of the more intelligent type. I have met with some instances, both at home and abroad, where the turkeys kept for stock purposes were the smallest and latest hatched, instead of retaining the picked and finest specimens, as would be the case with farm animals. Even where a new cock was introduced it would be a cheap bird, often immature, and by no means typical of his race. The temptation of high prices for the better birds is more than many breeders can withstand. Probably in general poultry breeding, and where the birds are the perquisite of the wife or daughter, this evil method is due to the fact that they have not studied breeding problems. Farmers as a rule take more interest in turkeys, and ought to know better. At least it might be expected that they would give the women-folk the advantage of their widened knowledge and experience.

THE MALE TURKEY.

The quotation given above clearly indicates how important is the selection of the male turkey as a breeder, for to a larger extent than is generally assumed will he influence his progeny. That is true if he were to be mated with only one hen, but when he will serve a dozen or a score of females, and be the progenitor of all their poults for that season, it is at once evident that his direct influence will be twelve or twenty times that of each individual hen in the flock. Any deficiency in one hen will apply to her brood and no more, whereas such inferiority in the male will be felt by those bred from all the hens. To put it on a weight basis, if, by lack

of size or weakened constitution, the poults of one turkey hen when matured are 11b. each below the average, the owner may lose returns for, say, 12 lbs.; but if the cock is the cause, all will be affected, and with ten hens, 120 lbs. may be sacrificed. Further, lowered vitality in one hen may mean infertility in her eggs or death of the youngsters, but should the cock bird be at fault then the loss will be commensurately greater. Whilst, therefore, it is desirable to make careful selection of the hens, as shown below, and any neglect in that respect is to be depreciated as false economy, the choice of the male is of tenfold greater importance, by reason of the wider influence exerted by him.

It is not enough, however, to consider the individual bird himself. We should learn as much as possible of his ancestry, for by doing so we shall be able to gauge the family characteristics and qualities. "Handsome is as handsome does" applies to a race as well as to a single bird. The difficulties in the way of pedigrees and stud books for ordinary fowls have proved insuperable, due to numbers bred and methods of rearing in flocks, but these might be overcome with turkeys, and any breeder adopting such a system would reap a corresponding advantage. A few have attempted it, more for their own guidance than the information of others. In making selection, therefore, enquiry as to family history and records is desirable. Often an apparently inferior bird of good ancestry, so long as he is vigorous and active, will breed much better stock than another which is exceptional so far as his family is concerned, though best of all is one which possesses both qualifications. Weedy dwarfed specimens, lacking in size and constitution, and those that are late hatched, should be avoided on the one hand, whilst on the other huge overgrown males, especially those that have been fed up for exhibition, are equally undesirable, and seldom make good breeders.

To many this is a question of cost. For such farmers as take up turkey breeding the expenditure of 20s. or 30s. more for a first-class bird presents no difficulty. Yet many of these will refuse to give more than 25s. or 30s. for a male

which had he been fattened for the Christmas market would have commanded almost an equal amount. It would be more profitable to give £3 or even £5 for a really fine specimen, as probably he would recoup the extra expenditure in his first season. If a hundred chickens are bred by him, an extra 30s. would mean less than 4d. each. A famous breeder once said to the writer that money wisely expended in purchase of the best stock birds was the best investment possible, and that for every shilling so paid he had frequently gained twenty. Perhaps his was an extreme case, but cheap birds are seldom worth having.

In selecting a male turkey he should be well developed in breast and body, without excessive

true equally with the wild and domesticated species. As will be seen by the following table, taking 100 as the mean for the male, the figures shown indicate the relative weight of the female:

BREED	MALE.	FEMALE.
Dorking fowl ...	100	79
Minorca fowl ...	100	86
Plymouth Rock fowl ...	100	82
Aylesbury duck ...	100	90
Toulouse goose ...	100	72
Bronze American Turkey	100	55

So that in standard-bred birds the female turkey is only a little more than half the weight of the male. At the same time her influence in respect to size which poults bred from her will ultimately



A Flock of American Bronze Turkeys.

[Copyright.]

Birds of this variety, which is the most popular existent, attain a heavier weight than those belonging to any other breed.

size, have a strong, long frame and limbs, be active in habit, carry himself in a stately manner and freely disport his plumage, be ready to resent the presence of strangers, and be quick and strong in voice. If in addition to these he owns a satisfactory parentage he can hardly fail to give satisfaction. A further point is that he should have been reared under favourable conditions, where there was plenty of scope for his wandering spirit.

THE FEMALE TURKEY.

There is a greater difference in weight between the male and female turkey than is the case with other kinds of poultry. That appears to be

attain is considerable, and consequently it is desirable that she should not be small. She should be fully developed in length and depth of body, be active in habit, yet quiet in disposition, and amenable to control. A turkey hen which makes a good forager is more likely to produce vigorous poults than if she is an indolent "stay at home." Apart from structure and size of body of the individual, it may be expected that the daughter of a good mother will reproduce the maternal instinct satisfactorily. The turkey hen is dignified rather than assertive in carriage, and has a soft, flute-like voice. As her plumage is less brilliant than that of the male in the colour breeds, so

long as she conforms to the racial characteristics, it is unwise to accord any great weight in that direction.

AGE OF BREEDING STOCK.

The consensus of experience is that the domesticated turkey is much less vigorous than the wild species, specially indicated by difficulties in rearing, which are thought to be greater than in almost any other class of poultry. The explanation may partly be from the fact that such domestication has been comparatively recent, and that these birds have not fully

gradually lessened powers are the result. Such is scientifically true and in accordance with practical experience. Upon this point Professor Eugene Davenport says:—

The reproductive functions, undeveloped until a considerable period after birth, attain a high degree of energy, if not their maximum, somewhat before full maturity is reached. They then decline, and fail entirely in old age. Their duration is therefore considerably less than the life of the individual, often dropping below 50 per cent. of the full life period. . . . That there is danger in continued reproduction from immature animals, even though they are sexually vigorous, there is grave reason to fear, and yet, in general, reproduction antedates maturity.



A TURKEY SHED.

There is no better form of shed than that depicted above in which to confine turkeys during the few weeks previous to killing. [Copyright.]

adapted themselves to the changed conditions, though after four centuries that should not be the case. I have no doubt whatever that the most potent reason for weakness in the poults is due to the use of immature stock, a fact which is becoming recognised by breeders, though not nearly to the extent necessary. It is generally accepted that a turkey does not attain maturity until it is nearly three years old. That being so, from such age onwards should be the period when the birds will transmit to their progeny the greatest amount of constitutional vigour. On the other hand, if mated before maturity is attained, or rather before it is approaching, and such is continued in successive generations,

In fowls we are learning that more vigorous chickens are produced from matured parents than from yearlings, and as these attain full growth in their second year, that is nearly eighteen months earlier than do turkeys, the age at which one may be used for stock purposes is no rule as to the other.

Upon this question the future of turkey farming may to some extent depend. Therefore it deserves full consideration. Darwin stated, on the authority of Judge Caton "that the wild turkey in the United States does not breed when a year old, as the domesticated turkeys there invariably do," as an instance of increased fertility under domestication. Selection for

earlier maturity must have its influence upon the reproductive functions, but, as a general rule, in all abnormal or forced animals and birds, the natural vigour is lessened, and if such process is continued will bring its own punishment. Sexual activity is no proof of health or physical strength, and sometimes appears in the inverse ratio.

Such evidence as is obtainable from breeders varies to a considerable extent. In various publications we find it stated that male turkeys over three years old are unreliable as breeders. For instance, Mr. Willis Harris says that "the stock birds should not be less than one year old, and not more than three," yet goes on to say that "it is towards the latter age the birds reach their prime." Surely what is called the prime should not be the end of the breeding period of life, and if so there is something wrong in the earlier treatment. The fact is that many breeding theories are due to fanciers and exhibitors, who, to attain success in the show room, adopt methods which are antagonistic to the true interests of their stock. This is recognised by a prominent breeder of turkeys, who, after recording the view that older turkeys often fail in fertility, says:

I am quite prepared to allow that showing turkeys very much not only impairs their constitution, but also lessens fertility, and that may account for many of the best exhibition birds being practically sterile after their third year.

On the other hand, practical turkey farmers make their profits by successfully raising for market purposes a number of birds, not by individual specimens as in the case of fanciers. These must have vigour of constitution, which cannot be secured by the use of yearlings. Or, as stated by Mrs. Ida J. Wright in the *American Poultry World*:

Turkeys under two years should not be used for breeders. This is especially important in regard to the tom, as he is considered to be one half the flock, but it is my opinion that much of the difficulty experienced in raising turkeys would be overcome by breeding from two, three, and four year old birds, both male and female. The turkey of either sex is at its best at these ages, or even older. From experience I have found a vast difference in the size and endurance of poults as produced by old and young stock, always in favour of the former.

On the other hand, the period of mating should not be unduly delayed, otherwise functional activity may be checked and fertility lessened. A safe rule will be not to use yearlings of either sex as breeders, and to regard that as the period of growth. Matings should be made when two years old, and can be continued for three years. As there is no advantage in very early hatching of turkeys, the temptation to use young stock as when breeding table chickens and ducklings is absent. The one drawback to the use of older males is

that they sometimes tear the hens, but that can be prevented by cutting the spurs. The disproportion already referred to in size of male and female turkeys makes it all the more necessary that the latter shall be as old as the former, and if either is the younger it should be the male.

SIZE OF DOMESTICATED TURKEYS.

It is a very common opinion that the wild turkey is much larger than any of our domesticated races, but fuller enquiry does not justify such a view, and it would be against all experience with other species. That occasionally wild examples of the *meleagris* are shot exceeding anything seen in the hands of farmers appears to be without doubt, but these are exceptional and probably are old birds. The North American turkey averages 20lbs. for cocks, and 15lbs. for hens, which are exceeded by nearly all tame breeds, and in some cases to a large extent. Such weights would indicate that the great gap between the two sexes as given in the standards should be lessened, for taking 100 as representing the wild male, the hen's proportion ought to be 75, as against 55 in the standards for domesticated turkeys. This lessening should be accomplished not by increase of size in the hens, but by reduction of the weight for cocks, which on the same proportion should be 26 $\frac{2}{3}$ lbs., instead of 36lbs., as given in standards for the bronze. The same is true to a lesser extent for other breeds. There is no gain, generally speaking, in advancing unduly the size of turkeys, as specimens are quite large enough for ordinary purposes. Our object should be to lengthen the period of consumption, which will be accomplished by sale of birds moderate in size.

In this connexion there is a very important question for the breeder, namely, what weights should the stock be when mated, that is, in relationship to the general standard. To a considerable extent size in our domesticated races is abnormal, and by neglect we should find reduction very speedily. Turkeys are kept entirely for their meat qualities, and, therefore, volume of flesh is of importance. We require bulk of frame, a deep keel, a long sternum, and stout legs, abundantly covered with strong, thick muscles, but we do not want fat, which adds to the bulk and at the same time checks the functional and muscular activities. Therefore, both in the case of cocks and hens the body should be kept hard and firm, and so long as the skeleton is large, heavy weights are undesirable, but more so in the former than the latter. Hens weighing 16 to 17lbs. and cocks scaling at 20 to 22lbs. will produce quicker growing and ultimately heavier poults for the market than would fat specimens weighing several

pounds more. The capacity to fatten must be there, but that is family quality for future use.

WHEN AND HOW TO SELECT.

Apart from the use of yearlings for stock, sometimes we find turkey breeders who keep the small weedy specimens, which can only be sold at reduced prices, for the next season's work. That is a foolish action, and needs no more to be said in condemnation. Others grow all in the same way and then pick out in December what they wish to retain. Selection of such as are intended to be used as breeders eighteen months later should be chosen in the early autumn before the fattening or feeding-off stage commences, and given a free run where they can find the greater part of their food until the supply is reduced. During the following year similar arrangements should be made. If the young hens lay, the eggs may be eaten, or set to produce birds for killing. The main difficulty will be with the young cocks, but if located apart that can be overcome. If the conditions are such that this cannot be arranged, it will be wiser to keep only the young hens for future use, and purchase as required a two-year-old male of reliable strain, in exactly the same way as a farmer buys a bull or a boar. As a general rule it will not be necessary to buy more often than once every two or three years, as he can be retained in service for such a period of time. But, for reasons already given, the best possible should be secured. Any yearling hens that become broody may be used for hatching and rearing.

NUMBER OF HENS TO MALE.

One impregnation will usually fertilise the entire batch of eggs laid by a turkey hen. Therefore, as the number produced by her is not large, a male can be used for a considerable flock. There are great variations in the number of eggs produced by individual hens. Record has been made of one bird laying 80 eggs in a single season, but that is very exceptional, and as a rule one-fourth to one-half that number would be more general. We have no definite data as to how many eggs would be fully fertilised, but probably a dozen to fifteen would be the maximum. Therefore, increased production would necessitate successive service. Turkeys are not, however, kept to produce eggs except for hatching purposes, and there is nothing to be gained by increasing unduly the number laid. That this can be effected is unquestionable, in the same way as with other poultry, namely, by removing from the nest eggs as they are laid. In this manner many breeders obtain from 20 to 30 eggs before the hen commences to sit, the excess of which above her capacity to cover are given to yearling hens or ordinary fowls. In experience it is found that an active two-year-old male can be used with a score of hens, reducing the number in succeeding seasons until ten is his final year's harem. As a rule only one batch of eggs is produced each season, though sometimes a second lot will be obtained in the summer, which are not, however, usually worth hatching.



A Flock of Black Norfolk Turkeys on an East Anglian Farm.

[Copyright.]

THE TURKEY CROP OF THE UNITED KINGDOM.

Why Turkeys are Dear and an Article of Luxury.

By "STATISTICIAN."



VERY December, as the cycle of the year brings us to the great Christmas Festival, there is brought home the neglect of turkey breeding by farmers in Great Britain especially, for, as shown below, Irish agriculturists are not nearly so blameworthy. As a result of increasing demand, of better prices, and of declining foreign supplies, the openings for at any rate the better qualities are greater than ever, and are even less filled. These facts need not be elaborated. They are self evident. The signs are that this season our markets will be shorter than ever. This is the time, therefore, to again call the attention of those who have the power to remedy so unsatisfactory a condition of affairs to what they are sacrificing by their neglect and supineness. The demand is there unsupplied. It is their business, as it would be their profit, to meet it.

Before presenting figures in detail to readers of the ILLUSTRATED POULTRY RECORD there is an important consideration, namely, the small present consumption of home turkeys in this country. It is impossible to include foreign as there is no means of saying how many are imported. Probably about 400,000 are received from abroad every year, or rather more than one-fourth of home production. These are not included in the following calculations.

I find in the Poultry Census, recently issued, that of young turkeys in 1908 there were as stated below. The Irish returns for 1912 are added.

Number of young turkeys in United Kingdom.

England (1908)	...	...	395,000
Wales (1908) ...	...	...	61,000
Scotland (1908)	...	...	42,000
Ireland (1912)...	...	...	1,034,552
Total, United Kingdom			<u>1,532,552</u>

I have not included the adult birds, as the above represent those killed for eating. Taking the population at the last census (45,365,599), this means that of native birds, rather more than one-thirtieth of a turkey was consumed by each individual, or, to put it in another way, one such turkey was the share of $29\frac{1}{2}$ persons. As the population stated includes children who are not yet meat eaters, it will be better to consider the family consumption, adopting the

usual computation of five units in each household. In this case the average home turkeys per family is only 0.17 per annum; that is, one turkey is the allowance for nearly six households every twelve months.

If ever the time arrives when an average of two native turkeys are consumed annually in every household in the land, not an extravagant anticipation, we shall require to breed upwards of eighteen millions of these birds every year, nearly twelve times the present number.

The diagram which forms our frontispiece shows the total numbers of adult turkeys in the four countries comprising the United Kingdom, as shown in the latest returns available, from which it will be seen that Ireland stands first, even though its area of cultivated land is nearly ten million acres less than in England, and eighteen million acres less than in Britain. The average of adult turkeys per 1000 acres of cultivated land is 6.18 and in Ireland 12.00, so that practically speaking Ireland has *pro rata* double the turkeys of the larger island, which is to her credit.

The table given on the next page shows (1) the respective numbers of adult and young turkeys in each country, and (2) the averages of each per 1,000 acres of cultivated land. As I pointed out in the October issue (page 27) one turkey is equal to five fowls or ducks. In the last column, therefore, I have worked out the corrected percentages on that basis, as it gives a truer idea of the extent of this branch of the poultry industry.

It will be seen, therefore, that Ireland is easily first, that Wales make a moderate second, that England is a bad third, and Scotland is at the rear. There are no climatic or physical advantages in explanation of these variations. It is the people and not the conditions that are at fault. In fact, it might be expected that Great Britain, especially in the larger farm areas, is capable of greater production than in Ireland.

Another fact which these figures reveal is the relatively small number of young turkeys as compared with the adults, namely,

In England 2.7 young to 1 old bird.

„ Wales	2.34	„	„	„
„ Scotland	1.55	„	„	„
„ Ireland	5.87	„	„	„

It can scarcely be profitable to keep a flock of turkeys if from them only 2.7 young birds are

NUMBERS AND PERCENTAGES OF TURKEYS IN THE UNITED KINGDOM.

England, Wales, and Scotland, 1908; Ireland, 1912.

COUNTRY.	ADULT TURKEYS.			YOUNG TURKEYS.		
	Total No.	Per 1000 acres of cultivated land.	Corrected Averages.	Total No.	Per 1000 acres of cultivated land.	Corrected Averages.
England	146,000	5.94	29.7	395,000	16.08	80.4
Wales	26,000	9.33	46.65	61,000	21.88	109.4
Scotland	27,000	5.55	27.75	42,000	8.64	43.2
Ireland	176,522	12.0	60.0	1,034,552	70.34	351.7
Totals	375,522	8.0	40.0	1,532,552	30.53	152.65

obtained for each unit as in England, much less 1.55 as in Scotland. Ireland is much better, but even there the proportion is too low. We might reasonably expect eight youngsters to each adult, which would run to nearly ten for each hen. On this basis the production might be increased, without keeping a larger stock of older birds, as follows:

In England	1,168,000	instead of	395,000
„ Wales	208,000	„	61,000
„ Scotland	216,000	„	42,000
„ Ireland	1,412,176	„	1,034,522

In United Kingdom 3,014,176 „ 1,532,522

From these figures it is evident that the responsibility for immediate shortage of supplies is immediately due to the failure to adequately use the breeding turkeys in the country, and that the number of young birds annually placed on our markets could be doubled in a single year, if farmers would wake up. Now is the time to do that in view of the coming season.

One thing, however, must be mentioned, namely, that the Irish returns include holdings down to a quarter acre, whereas the British stop at one acre. This will not affect the calculations.

In view of the fact that turkeys are essentially more suitable to larger holdings, attention

may again be called to the figures published in the Poultry Census of 1908, for Great Britain, in which it will be seen that the larger the holding the smaller the relative number of turkeys. The averages include both old and young stock, as these are not divided. The following are the averages:—

AVERAGE OF TURKEYS (OLD AND YOUNG), ON
FARMS IN GREAT BRITAIN, 1908.
Per 1000 acres of Cultivated Land.

Class of Holdings.	Arable Hldgs.	Pasture Holdings	Mixed Holdings	All Holdings
Above 1 & not exceeding 5 acres	52.79	74.68	103.13	76.29
„ 5 „ „ 50 „	27.74	25.86	42.64	34.92
„ 50 „ „ 300 „	18.65	7.93	23.99	22.09
„ 300 acres	9.41	1.31	11.11	10.63
Average	25.26	18.35	22.22	21.54

The figures here given are very striking, showing how vast is the opportunity for development on larger farms.

Only one point further need be emphasised, namely, that in Great Britain there are 12,801,974 acres of rough grazings, a part of which might be used for turkey breeding and rearing. Upon these at least two million young turkeys might be bred every year, to the great profit of the occupiers.

Big Figures.

It is estimated that the hens of the United States produce annually twenty-four thousand million eggs, or about 1,700,000 tons, which is about five times the consumption of the United Kingdom with only twice the population. If these figures be correct the average consumption of eggs in America is 260 per head of the population yearly.

Canadian Progressiveness.

Mr. A. G. Gilbert, of Ottawa, has been sent by the Dominion Minister of Agriculture for an extended tour through the Western Provinces of Canada, in order to visit the poultry plants on the various experimental farms, and thus be able to advise the central authorities as to future developments.

THE BALKAN WAR AND ITS EFFECTS.

BY EDWARD BROWN, F.L.S.

THE outbreak of a long expected and prepared for war in south-eastern Europe, and the remarkable successes of the Allies against their hereditary enemy, from whom they have suffered much during the last six centuries, are destined to bring about many changes. With these on the international side the minds of diplomats and statesmen are engaged.

There are, however, other directions in which the whole position of affairs may be altered. That fact is already evident in respect to the egg trade and will doubtless affect the supply of poultry this year for our Christmas markets. Germany imports considerable quantities of both eggs and poultry from the Balkan States. One result of the present conflict is to stop these supplies for the time being, and the shortage is being filled by deviation of produce from Russia and other countries, which would otherwise have come to Britain.

Such influences however, will be, temporary. It is future developments we have to consider, and these may be very great. My visits to Servia and Bulgaria in 1904 revealed the fact that those countries were capable of great increase in the production of eggs and poultry. Apart from geese, which do not concern us so much, both with regard to eggs and turkeys, of which latter I saw very large flocks in the Morave Valley and the frontier districts beyond Nish, it is apparent that with more favourable conditions as to outlets both Servia and Bulgaria lend themselves to the poultry industry. My journeys did not take me into Macedonia, where, I understand, similar conditions prevail.

Since the time named something has been done. The great difficulty has been, however, transport. Bulgarian ports are only in the Black Sea, whilst Servia has been hemmed in on all sides, unable to reach the open water except through other countries. Hence supplies coming to this country must be by rail, and international rivalries have not been conducive to trade, as producers and shippers have been at the mercy of others. Much could be stated in this direction from evidence in my possession, but it would appear that such will no longer be true. Alternative outlets and markets resolve many difficulties. As these are opened those who control present routes will be more amenable to reason.

Bulgaria has specially developed egg production, and at the time of my visit there was a

growing trade. In 1909, the last year for which I have been able to obtain complete statistics, eggs to the value of £364,000 were exported, of which 72 per cent. went to Germany. Our own share was nearly £3,000. The poultry sent out was almost nil.

Servia exported eggs in 1911 to the value of £140,000, of which more than 95 per cent. went to Germany, and poultry in value £117,000, of which practically all were taken to Austria-Hungary, the gross total being nearly £257,000. Many of these birds are sent alive. I saw at various stations turkeys and geese being loaded on to double decked waggons for transport to Hungary, where they are killed. Several attempts made to open up a direct trade with London have not been very successful.

What has now to be faced is that when the war is ended the whole aspect of affairs will be changed. It would appear certain that Bulgaria will secure an open port on the Ægean Sea, which will give her direct access to the Mediterranean and that Servia will be no longer penned, but be able to complete her projected railroad from Kladovo, on the Danube, giving connections with Roumania, Russia and Eastern Germany, to a port on the Adriatic, probably Durazzo. Security and freedom in Macedonia and Albania will lead to vast developments within those areas, making these and the adjacent lands food producing to an extent never known before. With the ports referred to available direct trade with the various countries, independent of the long rail transit across Europe, will grow enormously.

As was stated to the writer recently by a representative of one of the Balkan States, "Free access to our countries and a free Macedonia, mean increase of trade by a hundredfold."

Looking at this question without any national bias, but in regard to the poultry industry as a whole, it would appear evident that, with the settlement of south-eastern Europe, we may anticipate as great developments in the near future as have marked the last two decades in other lands. Perhaps the enlarged Bulgaria and Servia may be the Denmarks of coming years. The respective governments are alive to the possibilities of this branch of live stock, to which they have given some measure of attention. In 1911 the total imports of eggs into the United Kingdom from Turkey in Europe were in value only £80.

THE INVISIBLE CHICKEN.

TENTH ARTICLE. THE EVOLUTION OF SCALES.

Written and Illustrated by JAMES SCOTT.



SCALES are modifications of the epidermal part of the skin. So are hairs, feathers, and nails. The basic substance of all is a refractory one known as keratin.

The epidermis is the upper insensitive skin, and is as a rule closely bound to the under sensitive skin or dermis. The epidermis consists of minute flattened flakes, oval, round, or irregularly shaped, each carrying a central nucleus, which must be regarded as its manufacturer. The epidermal cells or flakes arise by the gradual elevation of submerged globular cells, each layer of which gets shallower and shallower as it nears the surface. The scurf which falls from a brushed head consists of epidermal flakes.

The manner in which scales may arise depends on the special environment of the animals concerned. I have shown in other articles of this series how hairs may be massed together, stiffened, and laid down as plates or scales. This style of procedure is more characteristic of the shells or armour of creatures which occupy muddy or sandy habitats, as there are no upper obstructions to deviate the processes from a continuous routine.

In cases, however, where there is likely to be much friction, another plan is feasible. Imagine an animal possessed of limbs which are enclosed in a very soft, smooth, flexible skin. It travels through herbage and the undergrowth of forests, by the sides of river banks, and over fields of all kinds. It has to *push* its way through sundry bushes and grasses, and as the skin rubs against these things it gets cut, and bleeds. Nature comes to its assistance, and causes the skin in due course to harden where it ruptures, at the same time folding it back to afford easier transit. Forward movement would of course push the patches of loose skin backwards, tucking them over one another, as it were. Backward movement would bring about a reverse result.

We have only to remember how easy it is to raise a corn on our own feet or hands to understand the value of this possibility. Continual rubbing by a boot, or implement, blisters the flesh. The epidermis becomes elevated, and allows other layers of insensitive skin to be added beneath it. If necessary, the thickness becomes dense and hard—horny, indeed. In such cases nature meets temporary demands. During evolution it carries out methodical creation in a similar way. The folded skin

previously referred to would stiffen somewhat, and this *tendency* would be transmitted to the animal's offspring.

Successive generations would possess harder skins than their predecessors: and a time would come when this trait became a settled feature, and the chance folds were converted into permanent, hard scales.

If such conditions can happen almost accidentally—if soft skin can be changed to hard corny matter in a few days—surely it is not wrong to believe that nature can do these same acts as settled features in successive stages throughout hundreds of years.

Hand or feet corns are not passed on from father to son because they are simply temporary conveniences aroused to meet special emergencies. When, however, an acquired habit or feature is likely to benefit the *race*, it is soon transmitted, as was the case with the Australian rabbits which learned to climb up and over high wire fencing.

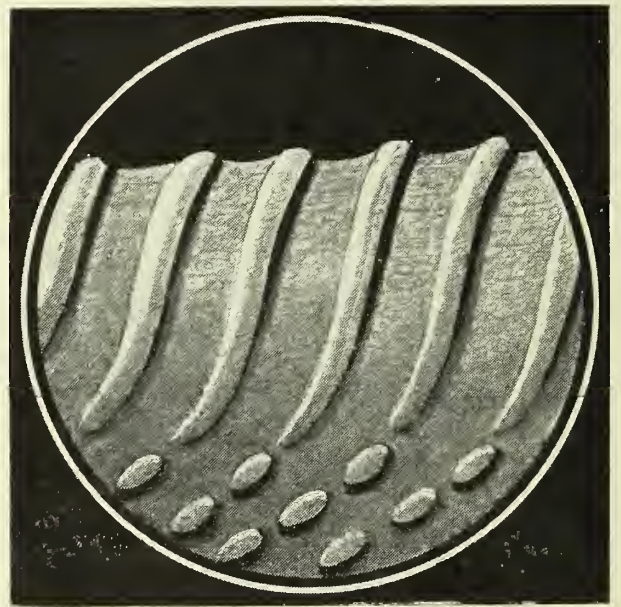


Fig. 1. A few segments of a toe of a 16 days' old embryo, showing skin folds. Greatly magnified. [Copyright.]

I believe that the nerves of a foot corn serve as mediums for warnings to sufferers that nature is only meeting passing needs, and that they should be carefully removed. Foot corns are useless beyond a certain point. Contrarily, hand corns are *minus* nerves because it is a useful thing to be able to daily handle, without discomfort, a tool or weapon, and so earn one's

living. The hardened *soles* of savages' feet are examples of the useful order of epidermal modifications.

Fish scales are developments of the underskin; and of course cannot be further considered.

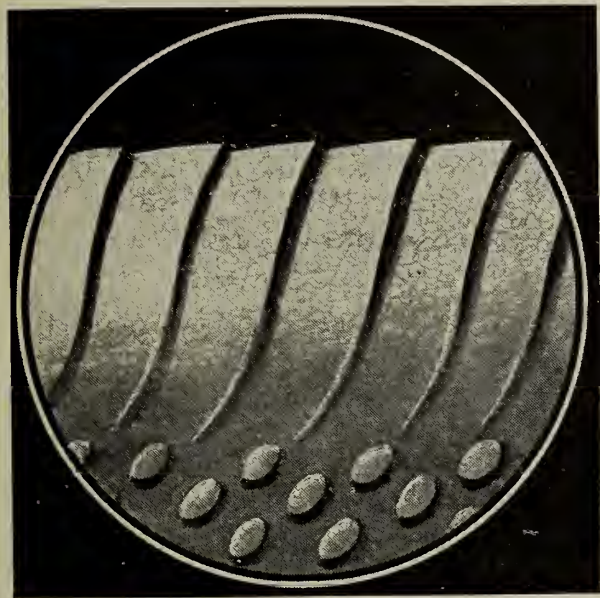


Fig. 2. A few segments of a toe of an 18 days' old embryo, distended but not completed. Greatly magnified.

[Copyright.]

Coming more directly to our subject we find that the scales of a fowl's leg are directed downwards, or outwards, like the tiles of a roof. This is opposite to those of a snake, but their position can be accounted for in this way:—When a chicken, cock, or hen, travels onwards it lifts a leg, leans frontwards, places it forward, and brings it down with a *backward* movement, so that the loose skin would be folded with edges pointing away from the body. The habit of scratching for worms, seeds, and so forth, would also produce this kind of fold; and, therefore, scales similarly placed.

I do not need to be reminded that this scaliness is now a determined feature, and does not depend on such movements and folding; but the ancestors of the fowl must have acquired leg scales in this way. Remember that these ancestors could not have resembled in any particular way our present birds, as they must have been four-footed, and ran about like quadrupeds. No doubt they acquired the habit of getting about on their hind legs alone, just as do kangaroos, squirrels, and some other animals. Mice and rats sit on their haunches and use their forelegs and forefeet as arms and hands. In time they may run about on hind legs only, if they find it more convenient to do so. These ideas are founded on scientific observations, and are not at all far-fetched, though they may conflict with the general notions of "the man in the street."

The divisions which produce the embryo scales do not all appear at once. Instead, they commence near the ankle, and gradually reveal themselves one after another, as time passes, up the leg. It is these scales, by the way, that principally connect the birds with the reptiles.

I find that if an embryo is kept out of an egg for a few hours, the legs and claws shrink a little, and the soft skin becomes wrinkled as in Fig. 1. Considering that growth is continually proceeding while the chicken is in the egg, and that increased expansion of skin is filled up quickly with bone or flesh substance, we are justified in looking at the matter in the following way. The skin puckers up in straight ridges if given the chance. These ridges would lay backwards, or forwards, if pushed in either direction; but evolution has decided that they shall fold outwards, and in this way they lie when the limb covering is fully expanded.

Suppose we have a limb ringed with loose flaps of the kind just spoken of. Circumstances may cause these rings to be split up into separate disc-like elevations, just as we find is the case with our embryo.—See Fig. 2. If needed, such elevations could be caused to grow out as hairs. Just as we can roll a piece of dough into a flat disc, squeeze it into a rope, turn it into a ball, or pinch it into various shapes, so can nature turn the keratinized substance into scales, hairs, nails, or feathers, using the wonderful nuclei, or life specks, and

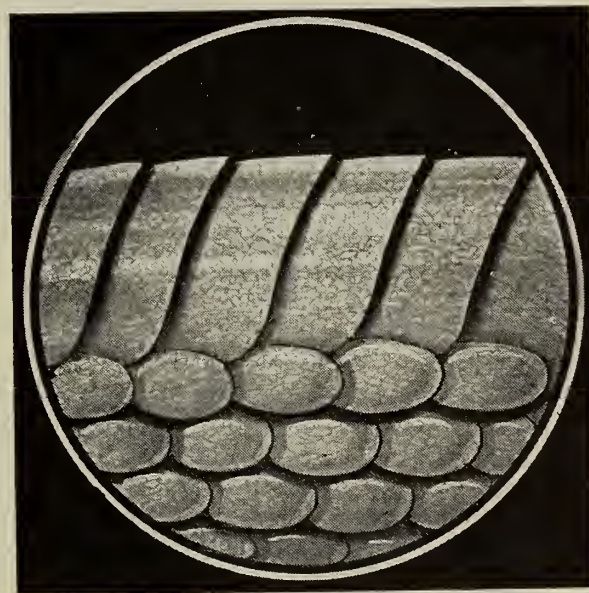


Fig. 3. A few segments of a completed toe of an unborn chicken, ready to hatch, showing how the papillæ in Figs. 1 and 2 are filled out. [Copyright.]

their cells as the medium for the purpose, and taking time to do it in.

Normally, the upper scales grow overlapping one another, and the lower ones like round elevations as depicted in Fig. 3. By degrees,

during development of the young unseen chicken, the round or oval ones widen until they touch one another, and then form the pattern shown in the lower half of Fig. 3.

Those on the soles of the feet, and beneath the claws, exhibit a padded condition, so that sudden painful shocks will not be experienced as the birds tread over hard ground in search of lime.

When we are examining the series of embryos ranging from the first to the twentieth day, we cannot help being struck by the fact, if we are looking closely enough, that there is a gradual transition from scales to hairs, or *vice-versa*; although in the finished chicken we find a fairly sharp distinction between the two kinds of appendages. Over the thighs of the embryo

during the earlier stages papillæ or small swellings appear in regular array, and the scaly markings begin to get obvious. In the area between the thigh and the shank each of the features is less noticeable, and there seems to be a rivalry as to which shall occur; whether hairs (which become feathers) or scales shall arise. There is a gradual passage from hair swellings to scale folds, and it will depend on the breed of the bird which will become most abundant.

Anyone who will take the trouble to consider the matter while examining various members of their poultry houses will not have much difficulty in comprehending the fact, in view of what the embryo discloses, that scales, feathers, and hairs, though apparently so different, are really modifications of the same thing.

TURKEYS AND DISEASE.

THERE is a popular idea, so widely prevalent that it is almost worthy to be designated a tradition, that turkeys are endowed with constitutions of such delicacy as to make their successful rearing a question of uncertainty and doubtful profit. One has not to seek far to discover the source from which this impression emanated. All the early writers on poultry culture, at least those who wrote in our own tongue, invariably accompanied their remarks on turkey-rearing with depressing warnings of difficulties to be expected on account of this inherent delicacy. But if the reasons that prompted their counsel are closely looked into they will be found to have been conceived because of disasters recorded by breeders who neither understood nor studied the wants and habits of the birds rather than because of any constitutional peculiarity impossible to conquer with increased experience. And so it is to some extent in our own day, although the growth of knowledge and the adoption of a more rational method of treatment on lines more strictly in accordance with the natural habit of the species have done much to dispel the notion that turkeys cannot be made, on the score of their health, to bring as much grist to the mill as other varieties of poultry.

It cannot be denied that turkeys in the interval of their lives between hatching and attaining adult age are often a source of anxiety and disappointment. It is equally certain that they pass through critical stages in their development, at which times improper food and surroundings will of a surety induce more than one form of fatal disease. But it is no less clear that if proper steps are taken to understand the nature of their physical peculiarities and to provide them with an environment as far as possible like that which they enjoy in the wild state, much will have been done to protect them

from disease and enable them, when it comes, to repel it successfully. In this connexion, therefore, it will not be inappropriate to turn aside for a moment in order to ascertain if history throws any light upon the conditions and circumstances under which the species came to be domesticated.

The wild turkey is undoubtedly of American origin, and still finds a home in some wooded parts of North America, where, however, it is rapidly becoming scarce. How long it was there before the new continent was discovered by the Spaniards would be impossible to say, but its domestication by man had been already effected before their arrival. By them it was probably first introduced to Europe, for the bird mentioned by the early Greek writers as "*meleagris*" can scarcely have been the turkey. In England we first read of it in the reign of Henry VII., while its arrival in France does not appear to have been chronicled until the time of Charles IX., when it was one of the luxuries at that monarch's wedding banquet. Its actual importation to England was by way of the West Indies, but the turkey is an inhabitant of temperate climes. It will thrive fairly well in India and Africa, but it is not adapted to tropical countries so well as to more northern latitudes; and, notwithstanding the name it bears, the bird has no historical relation to the countries of south-eastern Europe.

Assuming, then, the woods of North America to be the natural home of the wild turkey, a comparison of its habits of life in such surroundings with the treatment to which it is subjected under domestication will help to suggest some causes of failure in rearing other than that of inherent weakness of constitution. In unrestricted life it is accustomed to a free range, and exercises powers of flight by no means inconsiderable. Plainly, it is ill-adapted to confined runs and limited ground

space. As a perching bird, it will from the age of seven or eight weeks seek the high branches of trees as a roosting-place. This sylvan habit, besides providing shelter from cold winds and rain, protects it from the evil consequences of resting on wet ground. It is well known that stock birds in domestication will thrive much better when they have access to trees, while damp ground and exposure to rain are predisposing causes of many of the ailments to which turkeys are particularly liable.

Then, again, in the matter of food, that of the wild turkey includes abundant supplies of insects, fresh green food, leaves, berries, seeds and acorns, but especially must the supply of nitrogenous food be liberal. How often is this forgotten when the birds are kept in the poultry-yard, or on a patch of poor grass land, on which every insect has long before been eaten up! The study of the turkey in natural life, therefore, teaches us that the chief conditions tending to its health and vigour are shelter, dry footing, and protection from rain. Moreover, we learn that its natural diet is rich and varied both in regard to animal and vegetable components; and, lastly, the free, open life in the wild state suggests that when kept in domestication turkeys will soon suffer under the opposite conditions of insufficient ventilation.

The question of the character of the land upon which rearing operations are conducted has always been held to be one of importance, but it is not unlikely that too great stress has been laid upon the necessity for a light, sandy soil, and those poultry-keepers who have not such land are often deterred on that account from entering the ranks of the turkey industry. A sandy soil, of course, ensures dryness, a distinct advantage, but one that is discounted by the poor quality of grass and the consequent scarcity of insect life which such land carries with it. Excellent birds can and have been reared on even heavy clay soils, but a good barn or shed is essential so that a shelter on rainy days, or when the land is saturated, is always available. Our eastern counties, justly celebrated for their production of turkeys, provide a typical soil for successful rearing. Without being too heavy, it is rich enough, and yet such land can by no means be called light and sandy. What must be most closely attended to concerns not so much the quality of the land as the knowledge that a wet range and exposure to rain are the two factors that cause most havoc among turkey poults and chicks. They are the predisposing causes of pneumonia, and there is no other disease of turkeys, in this country, at least, to which losses in young stock can be traced. Another cause of this scourge will be found to lie in the custom of shutting up a flock of turkey chicks in an ill-ventilated, close house during the night, and in the early morning, with heavy dew or rain still on the grass, releasing them to run on it. The losses by this carelessness are very considerable, and the deaths may go on, by twos and threes, each day until the cause is discovered. Pneumonia is not

the only form of lung inflammation to be traced to the effects of exposure to wet. Bronchitis and pleurisy are diseases fairly common among turkeys, though not nearly so deadly or difficult to deal with. Every breeder also has at one time or another had birds suffering from rheumatic cramp. Here, again, the same cause is at work, and whatever remedies are applied, the treatment must include warm and dry quarters. There is another disease



A 211b. Turkey Hen (back view). [Copyright.]

in which cramp and helplessness of the legs is a prominent symptom, and which must not be confounded with rheumatic cramp. Reference is made to rickets, a malady dependent upon improper feeding, which occurs when the chicks are a couple of months old, and, of course, there are many dis-

eases of digestion, such as gastro-enteritis and dysentery, that are also the direct result of erratic systems of feeding.

Turkeys also are as prone to contract parasitic diseases as other poultry, and gapeworms, as well as certain species of worms that invade the intestinal tract are at times a great nuisance. Turkeys reared on land by themselves are much less liable to pick up these pests than when farmed with other poultry or in woods where pheasants abound. There are other reasons also for keeping the birds quite separate from ducks and fowls.

The parasitic disease, well known in America, fortunately rarer over here, termed "blackhead," was in a recent number of this paper so ably dealt with by Professor F. V. Theobald, that no description is required in this article. The precise character of the parasite that causes it is still in doubt, and more information regarding outbreaks must be collected. Turkey-breeders who may at any future time suspect their stock to be suffering from symptoms resembling those of "Blackhead," will both assist investigation and at the same time benefit themselves if they will bring the epidemic to the notice of one of the many authorities who are now only too willing to help them.

Turkey-breeders are familiar with the phenomenon known as "shooting the red" or "throwing the red." It consists of the changes by which the membranes about the head and neck of the bird rapidly develop and become turgid with blood. These membranes in turkeys are analagous to the combs and wattles of fowls, and their development at the age of two months or thereabouts merely means that the birds are attaining sexual maturity. The exposure of so large an area of uncovered skin suddenly charged with blood, together with other disturbances in the circulation going on elsewhere at the same time, render the young turkeys especially prone to chill. In fact, it marks a crisis, and the event is justifiably dreaded by breeders. This is the time, above all, when the birds must be kept warm and sheltered, and if the weather demands it they will be better confined to a shed until the process is complete. If these precautions be taken and an extra allowance of meat, onions, and oatmeal given, there is no need to look upon the event except in the light of a natural development of secondary sexual characters demanding a little special care and attention. This large surface of congested membranous skin renders turkeys also at all times more susceptible to contagious skin ailments than other poultry.

THE PREPARATION OF CHRISTMAS PRODUCE.



THE Christmas market is the present goal of poultry-producers in all departments of their preparation, and a large proportion of the birds of all descriptions that are now undergoing the fattening process are destined for that demand. It is a special demand with a character of its own, and as such it requires special preparations, whether the birds involved are turkeys, geese, ducks, capons or chickens. Although, perhaps, in some particulars size is not so highly considered as it was a few years ago, it is quite certain that quality and condition are required—and in as superlative a degree as may be. The preparation is cumulative, and the result is achieved by successive stages—back through fattening, rearing, and incubation to the ancestry of the existing stock; but the marketable appearance owes much to the treatment of the subject during the few weeks preceding killing, and although the finishing process may be well under way, much remains to be done between now and the end.

Of capons I do not propose to say much, their production in this country being strictly limited. Moreover, the operation involved in caponing is one of a very delicate nature, necessitating a certain amount of skill and practical experience for its successful performance. So rarely is caponing practised by commercial producers that I have been able to discover only one farm in a very considerable

area of the chicken-raising South upon which it is performed systematically as a part of the regular routine, and in that case the circumstances are exceptional—the farm being the rearing-ground of a poulterer with a select West London trade; but even in this instance the output is numerically small, and confined to the one season of Christmas. It is, of course, very generally known among practical producers that large and well-fattened fowls of the "Surrey" description frequently pass for capons with the generality of consumers, although it is doubtful whether the actual producer benefits to the additional extent of the fancy pseudonym, and we may very well leave the subject of capons, as such, as being outside the ranks of the average preparation.

Chickens follow in natural sequence, and a considerable proportion of their fattening course remains to be covered; but the important period of cramming is rapidly approaching, and until its actual arrival the birds must be kept "pecking." This maintenance of appetite during a sufficient continuance of trough-feeding is always a test of skill, the severity of which is increased in proportion to the length of time and the endeavour to secure the rather extra quality and condition that is looked for in the Christmas market. A common fault of the inexperienced is to put fowls on too full a ration at the beginning, and to attempt to force them unduly throughout the preliminary stage of trough

feeding, the usual result of such an ill-advised method being a set back, consequent upon impaired digestion. The cure necessitates a fast, and the subsequent regaining, as far as may be, of lost ground; but such a mischance may be avoided by a careful regulation of the rations and their gradual adjustment to the requirements as fattening progresses, and only by so doing can chickens be brought to their highest possible point of perfection as trough-feeders, at the proper time for the commencement of cramming. A uniformity of treatment throughout is likely to defeat the object in view, and the best treatment is progressive in character. Not only must the quantity of food allowed at each meal be gradually increased until during the few days immediately before cramming the supply must equal the largest appetite, but the consistency of the mixture should be regulated, being rather more liquid at first than subsequently. During this and the time of cramming the birds must, of course, be cooped, a condition of confinement that is necessary to secure the full benefit of the feeding, but also one that necessitates the careful dieting referred to above; and for this purpose there are several admirable coops obtainable from the appliance makers.

Despite the exercise of the greatest skill in trough-feeding the period is not uniformly controllable, and its termination must to some extent depend upon the individuality of the birds; and to the same extent the continuance of cramming is not always according to time-table, so much depending upon the health of the chicken and its maintenance under extremely artificial conditions. Three weeks is about the normal extent of the complete process, and such additional advantages as are obtainable by any prolongation depend almost entirely upon the practical knowledge of the fatterer.

The character of the food is as important a consideration as the manner of feeding it; yet, although the factors involved in successful fattening are so dependent upon one another, it is obvious that the quality of the result cannot be of the finest description without the use of suitable feeding-stuffs, just as it is plain that these will not be made the most of unless presented properly. I am quite aware of the fact that it is a repetition to insist that Sussex ground oats, milk, and fat, in combination, make the one fattening mixture that may be regarded as the best for most purposes; but I am satisfied that it is not a vain repetition, and I hope to continue making it as long as there is one uninitiated reader. There are other mixtures just as there are other results, but I reiterate the superiority of this one—more especially for the preparation of Christmas produce.

I have not really neglected the turkey, or misunderstood the relative importance of the larger bird at this season, but I have considered the chicken first as representing a wider preparation; moreover, the practical application of the general principles is very similar in both cases. The month of special preparatory feeding, which is about the average

fattening period of the turkey, has been already commenced; and the occupants of the large, airy shed—such as is most suitable for their accommodation—that were in the best running condition at the beginning of their confinement, will respond most readily to the fattening process. This requisite initial excellence of health and condition



A couple of American Bronze Turkeys, weighing 51½ lbs. the pair.

[Copyright.]

is, if anything, of even greater importance in the case of the turkey than that of the chicken, because in the larger bird we have to do with a very delicate and easily disordered digestive system. It will therefore be seen that the remarks relative to the progressive nature of the feeding, and the due regulations of quantity and consistency, apply very strongly to the fattening treatment of the turkey. At the commencement of feeding for fattening, feed lightly, and remember that most of the trouble connected with these birds is the result of over-

feeding; recollect also that the real preparation of turkeys for Christmas begins with hatching—perhaps more entirely than is true of the other stock. In addition to the standard fattening mixture to which I have alluded, barley-meal, wheat-meal, and buckwheat-meal are also used as ingredients by many feeders, as well as swedes, potatoes, and other vegetables; but—and this is an injunction of general application—grit is always essential. Although some fatteners consider that two meals daily are sufficient in fattening turkeys, the peculiar constitution and requirements of these birds suggest that three are preferable, and that number is allowed by some of the largest marketers. It is also a very common and beneficial custom to scatter some good sound oats in addition to the trough-fed mixture, and my own experience approves the use of some grain in this manner—but only when more exercise is allowed than is possible in a shed—and the restricted use of a strictly limited range is of considerable help in the maintenance of health. This is, however, a matter of opinion, and methods vary to some extent; but total confinement towards the end of the period, if carefully judged, is usually considered to be both reasonable and preferable. As to whether turkeys should be crammed or not, I can only say that the process is not particularly easy, the birds being heavy and awkward, and the time and labour involved are by no means inconsiderable; nevertheless, it is a matter that must be decided in accordance with the condition of the turkeys and the requirements. It is by no means generally necessary, and I know some who have given it up on account of the increased cost of labour, which is held to be disproportionate to the return.

Fat geese, although forced into the background by the greater prominence of turkeys at the Christmas season, still fill a place of their own, and the preparation for the occupancy of their relatively inferior position involves the same importance of previous condition and present confinement. The denial of access to swimming-water is essential in the case of water-fowl undergoing special feeding, and geese do well upon the well-bedded floor of an open-fronted shed. A very usual soft-food mixture for morning feeding consists of barley-meal and sharps, to which some add brewers' grains; but I adhere to my preference for ground oats, as used in feeding the other descriptions, if the finest quality is desired. This should be fed in a trough, as also should the grain that is supplied at night; the latter in the water-trough together with grit, and barley is usually preferred. Some green food is allowed, and the quality of the flesh is very much improved if milk is used in mixing the soft food during the final fortnight. Ducks are housed in a similar manner, and allowed two full meals daily of a soft mixture, which may contain barley-meal, buckwheat-meal, and some maize-meal, with sharps—or the standard mixture that permeates the whole of these notes,



A 27lb. Turkey.

[Copyright.]

WHO'S WHO IN THE POULTRY WORLD.

MR. GERALD TYRWHITT DRAKE.

As an appreciation of the excellent services rendered by Mr. G. T. Drake as hon. secretary of the Poultry Club for six consecutive years, the members, on his retirement from that post, returned him at the head of the poll as President for 1912-13, at the recent election, while at the Crystal Palace Show last month they presented him with a handsome silver cup and a charming scarf-pin as a mark of esteem.

Mr. G. T. Drake, who is the only child of the late Mr. H. W. Tyrwhitt Drake, was educated at Charterhouse, and so keen a poultry fancier was



MR. G. TYRWHITT DRAKE.

he that at the early age of six he commenced keeping Leghorns, and ere he retired from exhibiting he had made a name with the breed. Not only was he extremely successful in breeding and showing Pile, Duckwing, and Cuckoo Leghorns, but he also went in for Browns, Whites, Buffs, Blues, and Blacks, and at one time he was the only fancier in this country, and probably in the world, who specialised in the whole of the varieties at the one time, while in ten years he had won 3,000 prizes and awards.

In addition to serving the Poultry Club for six years as hon. secretary, he held a similar position in connection with the Mid-Kent Agricultural Association for a like term of years; and although for a brief space he retired from it he took up office again this season as hon. secretary and treasurer, and was instrumental in the association running a most successful summer show. He is also hon. secretary and treasurer of the Amateur Menagerie Club (which he founded), on the Council of the Tunbridge Wells and South-Eastern Counties Agricultural Society, and a member of numerous specialist clubs.

Mr. Drake owns the largest private collection of wild animals (carnivora) in the United Kingdom, and it includes six lions and lionesses, five bears, leopards, wolves, and many other animals, as well as birds, in all about a hundred. He holds the proud distinction of being the only amateur lion tamer, while he is the only amateur to regularly go on with and show fully grown animals.

In other directions, too, Mr. G. T. Drake is not unknown. He is a keen motorist and has won several medals in reliability trials. Among these may be mentioned the gold medal for London to Edinburgh and back, twenty-two hours (continuous) each way! He is a director, and manager of a department of Messrs. Style and Winch, Ltd. (large Kentish brewers), he is on the board of management of the West Kent general hospital; and he is now turning his attention to municipal work and is contesting a seat on the Town Council of Maidstone.

Verily, then, is Mr. G. Tyrwhitt Drake "a man of many parts," and certainly more than the vast majority of those imagine who have met him in poultry-circles only.

MR. M. A. JULL, B.S.A.,

Professor of Poultry Husbandry, Macdonald College, Quebec.

Mr. M. A. Jull graduated from the Ontario Agriculture College in 1908, and was appointed "Poultryman" on the West Virginia Experimental Station, U.S.A. He was engaged in that capacity for a little over a year, and while there conducted experimental and research work along lines of poultry culture. Experimental work undertaken had to do with incubation, brooding, breeding and feeding for egg production, about 2,000 fowls being kept at the station. He left West Virginia in June, 1909, to accept the appointment of Poultry Instructor with the British Columbia Department of Agriculture, British Columbia, Canada, and was engaged in that capacity for one year, when he was appointed Live Stock Commissioner for the Province, in which capacity he also served for one year. After which Mr. Jull was appointed Professor of Poultry Husbandry at Macdonald College, Quebec.

While in British Columbia the poultry work undertaken was of an educational nature, being principally extension work in development of the poultry industry of the Province. Local poultry associations were organised, a Provincial Association was also organised with which the local associations became affiliated, and general informa-



MR. M. A. JULL.

tion was given to the public on matters pertaining to poultry culture. Poultry lectures were delivered at institute meetings and short courses. A co-operative egg circle was established at Duncan where the eggs were gathered by the creamery and a fattening station was established. Four bulletins were published, including "Practical Poultry Raising," "Incubation and Brooding," "Production of Eggs," and "The Poultry Industry on the Pacific Coast." These bulletins were widely distributed throughout the province and elsewhere.

At Macdonald College Mr. Jull is engaged primarily in educational work and is undertaking considerable experimental work.

Outside versus Inside.

Mr. O. F. Sampson, writing in the *American Poultry World*, says:—"The time has come when breeders are going to breed for the inside rather than the outside of the bird, for results rather than feather markings. If a combination of the utility and fancy idea will accomplish this, then it should prove a success, even if the birds don't stand all the test."

TURKEY RAISING THREE HUNDRED YEARS AGO.

"The English Husbandman," by Gervase Markham, was published in 1615. The following is the section dealing with turkeys, the quaint phraseology of which can be studied with interest in the twentieth century:—

"Of Turkies, their nature, use, increase and breeding.

"Turkies, howsoever, they are held by some writers devourers of corne, strayers abroad, ever puling for meate, and many such liked pained troubles, as if they were utterly unprofitable, yet it is certain they are most delicate, either in Paste, or from the Spit, and being fat, farre exceeding any house-fowles whatsoever; nay they are kept with more ease and lesse cost; for they will take more pains for their food than any other Bird, only they are enemies to a Garden, and from thence must ever be barred. They are when they are young, very tender to bring up, both because they have a straying nature in themselves, and the dammes are so negligent that while she hath one following her, she never respected the rest; therefore they must have a vigilant keeper to attend to them till they can shift for themselves, and then they will flock together and seldome be parted. Till you fat them you need not take care of food for them; they love to roost in trees or other high places.

"Now for your choise of such as you would breed on; your Turkie-Cock will not be above two yeere old at most, be sure that he be loving to the chickens, and for your Henne she will lay till she be five yeeres old and upward. Your Turkie-Cock would be a bird large, stout, proud, and maresticall, for when he walketh directed, he is never good treader.

"The Turkie-Henne if she be not prevented will lay abroad in secret places, therefore you must watch her and bring her into your Henne-house and there compell her to lay. They begin to lay in March and will sit in April, and eleven egges or thirteene is the most that they could cover; they hatch ever between five and twenty and thirty daies. When they have hatched their broods be sure to keepe the Chicks warm, for the least cold kills them, and feede them eyther with Curds, or greene fresh-Cheese cut into small peeces. Let their drinke be Milke, or Milke and Water; you must be carefull to feede them oft; for the Turkie-Henne will not like the house Henne call her chickens to feed them. When your Chicks have got strength, you shall feede them abroad in some close, walled grasse-plat, where they cannot stray, or else ever be at charge of a keeper. The dewe is much hurtfull unto them, and therefore, you must house them at night, and let them abroad after Sunne rise in the morning.

"Now for the fatting of Turkies. Sodden Barly is excellent or Sodden Oates for the 1st 14 days, and then for another fortnight, cramme them with all

sorts as you cramme your Capon, and they will be fat beyond measure.

"Now for their infirmities: when they are at liberty, they are such good Physitions for themselves, that they will never trouble their owners, but being coopt up, you must cure them as is described for Pullen. Their eggs are exceeding wholesome to eat, and restore nature decayed wonderfully."

TURKEYS IN KENSINGTON.

It is scarcely possible to realise what the outer areas of London were like nearly ninety years ago, or to conceive the breeding of Turkeys within the sound of Big Ben at Westminster. Yet such was the case. Old William Cobbett in his "Rural Rides," of which an excellent reprint has recently been published in Dent's Everyman's Library, Nos. 638 and 639, did this, as seen by the following extract (vol. i., p. 268), written at Reigate, Surrey, October 20, 1825.

"I was going to-day by the side of a plot of ground, where there was a very fine flock of turkeys. I stopped to admire them, and observed to the owner how fine they were, when he answered, 'We owe them entirely to you, Sir, for we never raised one till we read your *Cottage Economy*.' I then told him that we had, this year, raised two broods at Kensington, one black, and one white, one of nine, and one of eight, but that, about three weeks back, they appeared to become dull and pale about the head, and that, therefore I sent them to a farmhouse, where they recovered instantly, and the broods being such a contrast to each other in point of colour, they were now, when prowling over a grass field, among the most agreeable sights that I had ever seen. I intended, of course, to let them get their full growth at Kensington, where they were in a grass plot about fifteen yards square, and where I thought that the feeding of them, in great abundance, with lettuces and other greens from the garden, together with grain, would carry them on to perfection. But I found that I was wrong, and that though you may raise them to a certain size in a small place and with such management, they then, if so much confined, begin to be sickly. Several of mine began actually to droop: and the very day they were sent into the country, they became as gay as ever, and in three days all the colour about their heads came back to them."

The same lesson has been learned by many since these words were written.

One Effect of High Prices.

A society has been formed at Cleveland, Ohio, called the Thirty Cent Egg Club, in order to bring down the winter price of eggs, we suppose by the members resolving not to buy when eggs are more than fifteen pence a dozen. On this side the same could be accomplished without a club.

POINTS IN WINTER MANAGEMENT

By FRED W. PARTON.

THE UNIVERSITY, LEEDS.

The time is now upon us when our thoughts naturally turn towards winter, and arrangements should at once be made with a view to obtaining from the fowls of their best during the next few months. This can only be accomplished by recognising that the management generally should be different from that which might have been eminently suitable in summer. We deal first with poultry that have for some time past been enjoying the run of arable land. In some parts of the country, notably in the north of England, the corn was still standing until well into September. It had consequently to bear exposure to the high winds prevailing at that time, which practically threshed it, and in this way destruction in one direction resulted, while in another much benefit was obtained, since plenty of food was forthcoming by the foraging of the poultry. With the approach of winter the pullets which have been running on the outlying parts of the farm should be brought nearer to the farm buildings, so that more shelter can be afforded than was possible under the farm colony system of housing. The birds will have grown accustomed to their full liberty, and may be somewhat wild, owing to the freedom of their conditions. Consequently they may not take very readily to their new quarters, and some difficulty may be experienced in persuading them to become accustomed to their new surroundings, even to the extent of having to remove them several times from their old haunts.

No forcing methods should be adopted, but everything be done to encourage growth and harden the constitution, which liberty and regular change of environment goes far to foster. There comes a time, however, when the general management as to housing, feeding, &c., must be on lines that will utilise and bring into profit these qualities which are the outcome of care and attention from their chickenhood days and onwards. It is absolutely imperative that they have adequate shelter and warmth from the severity of winter. Good housing is quite as conducive to the reservation of constitution as is proper feeding, and at any cost their stamina must be maintained or they will be unable to bear the strain of winter egg production. Proper housing of poultry is of the utmost importance, and it has a great influence in determining whether the fowls are run profitably or otherwise. Cold, draughty houses are an abomination alike to fowls and owner. Naturally in faulty houses much of the food consumed by the inmates goes to maintain bodily heat, food which, were warmth and shelter provided, would go towards the making of eggs. Therefore—excellent as is the farm colony system of housing during the

spring and summer—I would emphasise the importance of bringing the fowls nearer the farm buildings or any other place where protection may be had against winter weather. Open-fronted houses are now widely used, and no doubt they serve a good purpose, in that the inmates enjoy fresh air and are kept under very healthful conditions. We are strongly in favour of their use, provided that they are so constructed that a shutter or other form of protection may be adjusted when necessary. Otherwise such houses become a fruitful source of cold, which very often is the forerunner of much worse. As a matter of fact, preparations for winter should be made well in advance. It is not an uncommon sight to see in October, and even in November, pullets sleeping in the coops where they were reared. This certainly should not be, if winter eggs are to be plentiful. The weather very rarely grows gradually cold, but the change is sudden and quick, and unless winter quarters are ready the mischief may be done, since a sudden check to pullets that are approaching the period of laying will often retard them for several weeks, and every day, with eggs at winter prices, is of account. The houses should be thoroughly overhauled to see that they are in good repair, free from draughts, perfectly rainproof in both walls and roof, and that the perches are so arranged that they are not sufficiently high to catch the over head current of air, nor placed so that the birds are in the direct inflow of air from trap door and window.

In all well-managed poultry yards no wasters remain, and the dangers of overcrowding the house, and overstocking the land, are minimised. At the same time, it must be guarded against, since there are still large numbers of growing birds to accommodate. On the majority of farms the final selection of breeders has not been made, yet the experienced eye has already detected qualities in certain pullets which probably mean that they will be in the running at the finish. Both prospective breeders and the general laying flock require the same care, although their treatment should be different up to a certain point, and it is owing to this difference in treatment that it is desirable for the breeders to be selected as early as possible, so that they may not be forced to the same extent as those that are to be kept purely as layers during the winter months. It is a very general mistake to treat them all in the same manner and endeavour to get eggs in plenty from the entire batch through the winter. When the springtime comes the breeding-pens are filled with pullets that are half played out by their strenuous efforts during the cold months that have passed. The same treatment should, of course, be meted out to them so far as warmth and shelter, and all else that tends to keep them in health, is concerned, but food during the winter should not be so liberally given, nor should it be of the same stimulating nature as is provided for those that comprise the laying flock. The object is to reserve their force until the time when their eggs are required for hatching.

THE BEST BREEDS OF TURKEYS.

While the turkey breeder has not a very large number of varieties from which to make a choice, yet those that are at his disposal are all quite capable of fulfilling the purpose for which they are reared. With other classes of poultry there are a great many objects for which to aim. There are fowls for winter laying and for summer laying; there are chickens for table use, and for the early and the late trades. In addition to this, all domesticated breeds of poultry appeal to the fancier, who keeps them for his own specific purpose. With turkeys, however, there is really only one object in view to the person who goes in for this branch of rearing, and that is for supplying the Christmas markets with the "king of birds." Even the man who exhibits turkeys has the same object in view; he breeds large and typical specimens, and sells them to others to enable them also, in turn, to produce birds that will meet the only season when this delicacy is in demand. The demand—to any extent—is only a very brief one, but while it lasts it is enormous.

The four principal breeds of turkeys are the American Bronze, the Black Norfolk, the Cambridge Bronze, and the White. Each of these varieties possesses some attribute that especially appeals to their respective partisans.

THE AMERICAN BRONZE.

Probably no other variety will attain to the same weight as this breed. It is not at all uncommon for males to weigh up to thirty pounds and even more, and hens to weigh up to eighteen or twenty pounds. Large size is of the utmost importance, and even if the breed possessed no other good quality, this alone gives it preference, from an economic standpoint, over all others, since the first and foremost consideration in breeding turkeys is to have them large. A glance at the Christmas market quotations will at once reveal the fact that specimens weighing over twenty pounds realise practically double the price per pound of those weighing ten pounds. It is not under all and every set of conditions that turkey raising should be attempted, neither is it recommended to everyone. Turkeys are by no means easy for the novice to rear, and he can rarely compete successfully with the old and experienced hand. But of the four varieties, the American Bronze is the hardest. The chickens are comparatively easy to rear, and when they get beyond the early stages, they prove good foragers, and to a large extent look after themselves. They are heavy in bone, and, probably owing to their enormous size, are just a little coarse in quality of flesh. This, however, is, to a large extent, influenced by the nature of the soil upon which they are reared and the method of feeding during the final stages of preparation. As the name indicates, birds of this variety are bronze in colour. They are very handsome, showing brilliant lustre; the breast is much

darker than the rest of the plumage, and the wings are darker still; as a matter of fact, they are dark brown. The colour in both sexes is the same, save that the hens are of a lighter shade.

THE BLACK NORFOLK.

This variety has been bred for many generations in East Anglia, which district has gained such fame for the quality of its turkeys. It does not reach the same weight as the American, yet under good management and favourable conditions it does not fall very far short of the Bronze. It is not quite so hardy, but it has one advantage over its rival, in that its flesh is decidedly of a finer quality. Moreover, being lighter and smaller in bone, it really carries a greater amount of flesh than its appearance indicates. This, however, appeals to

white or silver grey at the ends. They are not quite so long in body as the American, but they have depth, while the legs are powerful and wide apart, and of a lighter colour than those of the Black.

THE WHITE TURKEY.

There are comparatively few breeders of this variety in England, but we have the highest testimony as to their fattening properties from those who do rear them, and the excellent quality of flesh is at once apparent to all those who have tested the matter. They are considerably smaller than are the three breeds already described, while they are rather delicate and more difficult to rear than the other breeds. They are not, however, kept to any great extent by the farmer who raises



A Turkey House made of Furze on Mr. Gage Harper's farm at Hadleigh, Suffolk.

[Copyright.]

the epicure more than it does to the masses, since, as previously stated, size is of first importance. They are very broad and deep in body, with powerful shanks and feet of a dark colour.

THE CAMBRIDGE BRONZE,

This breed is the result of crossing the American with one or other of the Black varieties. It possesses some of the hardihood of the former, while it takes after the Black in texture of flesh and smallness of bone. The hens are very good layers, and they may be depended upon to hatch and rear a brood of young ones every year. They fatten very readily, and take contentedly to confinement during the process. In appearance they are not so handsome as the American Bronze; the plumage, although bronze in colour, lacks the beautiful, bright lustre of the American, and the feathers are

for market purposes, but they are mostly kept by private breeders whose primary object is to provide for their own tables.

Wholesale Shipment of Stock Birds.

The *Canadian Poultry Review* says:—The car of live poultry shipped to the West last spring and personally conducted by Mr. J. I. Brown, was received with such favour that it is to be repeated by the shippers, Messrs. Gunn, Langlois Co., Montreal. A palace car of poultry will leave Montreal some time in October for the Western Provinces. This car will contain about fifteen hundred selected birds, orders for which will be booked in the order received.

PERSONAL LETTERS FROM AN OLD FANCIER.*

IX.—TO A MASTER OF FOXHOUNDS.

DEAR LORD FITZHUGH,—We had not time for a good chat the other day, as our trains were going in different directions. I was, however, very interested to learn what you stated to me. I was not surprised, for you have been warned before, that sooner or later those who have borne with more or less patience the loss of *their* birds by *your* foxes would rebel and take matters into their own hands, as they have a legal and moral right to do. It is, undoubtedly, a serious position so far as you are concerned. Masters, huntsmen, and hounds are all useless unless there are foxes. Without foxes there can be no sport. Your subscribers will revolt, and so the whole business must collapse. Absence of foxes means that they are being killed. And I must confess to very little sympathy with you and your Hunt. You have brought it upon yourselves. The remedy is, to quote Rudyard Kipling, "Pay, Pay, Pay."

Strange to say, not long since, I was staying with a friend whose hunting days are over. He now devotes himself to pheasant shooting, as that is more suitable to an eighteen-stoner. His wife is keen upon her poultry. Often has she complained of loss of birds by foxes, but he laughed at her. The other day his keepers reported that a fox had gone in for a feast of pheasant, and that a lot of his birds had been killed. It was bad manners, I know, of Master Reynard, who ought to have discriminated between the favourites of Master and Missus. Did not the fur fly? The atmosphere was vitriolic in the extreme. This good lady and I enjoyed it hugely, which only stoked up the conflagration. Whether a fox will be left in that district remains to be seen, for even a landowner is amenable to social prejudice. I could not but wish there were many such cases, for to see the biter bit is always a delight.

You know me well enough, however, to realise that I am not antagonistic to hunting as a sport, or desire to be offensive to my neighbours, even though my own personal loss as a result of good birds killed by foxes has been great. Were I to present a bill of actual cash sacrificed by me during the last twenty years it would startle you. Perhaps I have been a fool, as I have never made a claim on the Hunt for such losses, or ever killed a fox, though often tempted to do the latter. Probably, had men like

myself all over the country, who could afford to do so, acted differently many years ago, it would have been better for everyone. The fact is, you hunters have been spoiled by too much consideration on the part of those who, like myself, have a liking for sportsmen of all kinds. The time has come when this is going to be altered, and the sooner you recognise that fact the better. Old William Cobbett was an iconoclast in many ways, and often expressed himself brutally, but he was right in saying that "the great purpose of human art, the great end of human study, is to obtain ease, to throw the burden of labour from our own shoulders and fix it upon others." It is not too much to say that hunters have in the past saved their own pockets by making others pay part of the cost of their sport. It is said that eels like to be skinned. Maybe you imagined poultry-keepers have enjoyed seeing their birds killed, so long as you were happy, or were favoured by being permitted to feed foxes for your pleasure.

The fact is, times have changed, which has to be recognised. Many there are who, like Admiral Nelson at Copenhagen, turn their blind eye to the realities of life. He came out well, but that they will do so cannot be expected. That reminds me of a recent instance which is worth the telling. I recommended a poultryman to a gentleman some time ago, and whenever we have met the latter has expressed himself as delighted with his employee, the best, he declared, they had ever engaged. Recently I was interested to learn that the poultryman had left. The reason was as follows: One day the employer asked him to do a small thing, which he forgot. When reminded of it he apologised most fully, saying it had completely escaped his memory. The master lost his temper, and used language more forcible than polite, and, as he acknowledged, altogether beyond what the circumstances warranted. Next day the man gave in his notice. When asked for an explanation, his reply was to the effect that he had undoubtedly been to blame for his forgetfulness, but he had expressed his sorrow freely and fully. In spite of that he was sworn at, and he could not respect himself if he remained in the employ of anyone who addressed him in that manner. Nothing would move him from that position, not even the frank expressions of regret on the part of his employer. He is representative of what will be. You cannot help respecting the fellow. Poultry-keepers are not going to stand what they have in the past.

I know that all you said about bogus claims is perfectly true. I could tell you of instances in which such are made and paid every year, because the claimants are in an independent position and the Hunt *dare not* refuse to pay, otherwise they would have to suffer. The justification set forth is

* The previous letters have been :—

- No. I. —"To a Young Judge," March, 1912.
- No. II. —"To a Show Secretary," April, 1912.
- No. III. —"To a Lady Poultry Farmer," May, 1912.
- No. IV. —"To a Disappointed Exhibitor," June, 1912.
- No. V. —"To a Country Poultry Instructor," July, 1912.
- No. VI. —"To a Specialist Poultry Breeder," September, 1912.
- No. VII. —"To a Poultry-phobe Agriculturalist," October, 1912.
- No. VIII. —"To a Show Reporter," November, 1912.

The next will be addressed "To a Poultry Co-operator" and appear in our January issue.—EDITOR.

that the cash thus received is really a rent for use of the land and to repair the damage done in riding over the fields. That the farmer is entitled to recompense in these ways is evident, although the



A Pen of Buff Turkeys.

[Copyright.]

The Buff variety is pure buff throughout, and as white-legged as the Dorking. Each feather is double laced with white and black.

form of claiming is unsatisfactory. So much is to be said on your side. What about the claims made that are never paid, or are cut down until they are practically useless, and of the losses for which no claim is sent, by reason of the dependent position of those concerned, who have to "damn" and bear it, if they are unable to grin? That is where the shoe pinches. You pay those who can best afford to lose, because you must, and either refuse absolutely or pay inadequately such as are afraid of your power. Have you ever heard of the slave owner in America who, when an important and influential visitor was coming, told his negroes that they might ask for a second helping of pork, if they wanted it, so as to show how well they were treated. Every one that did so was soundly flogged for his temerity after the visitor had gone. What you have to set against the bogus claims are those which are real or are never presented. Probably for every £1 of the former the last-named amount to £1,000.

The most serious aspect of the question is the effect upon the development of our rural districts. Politicians and others talk about smallholdings, about building up a strong, virile peasantry, about the re-colonisation of our own country, much of which is simply gas. It is a popular thing to do. I have sometimes visited small farmers who are working hard and long, and seen the labours of weeks and months lost in a single night, "butchered to make a Hunter's holiday," if I may vary the Roman saying. Should they make a claim for compensation, maybe after weeks and months they will receive one-fourth the value, and have to bear treatment which is, to say the least, lacking in courtesy. Put yourself in the place of these people, dear Fitzhugh, and then try to realise their feelings. What wonder if they determine to exterminate the foxes. I am only surprised that they have not done so before.

The satire of the whole business is that the law is on the side of poultry-keepers, and not on that of the Foxhunter. Foxes are vermin, and have no legal rights. They can be killed as can rats or other wild creatures. They are not domesticated animals. You may buy foxes from Scotland or Belgium—by the way, where and when and how do the latter find admission to the country? I have heard some ugly stories of surreptitious landings on the East Coast—but you have no redress at law if anyone kills them. It is social influence and custom which has hitherto prevented this being done. The good feeling which at one time characterised rural life has died down, largely because of the lack of fairness in such matters as this. I have heard hunters state that if people want to keep poultry they must wire the birds in or shut them up at night, and that poultry are only kept on sufferance. My dear sir, the boot is on the other leg. It is your business to control the foxes. They are the culprits. That fact you have to learn, and the best way to impress the lesson is to make you pay to the uttermost farthing.

It is evident that your point of view has to be entirely altered. Hitherto you have had a good time, and managed to transfer responsibilities on to the shoulders of others. A boy's "howler" on one of the Ten Commandments reads: "Six days shalt thy neighbour do all that thou hast to do." That spirit is only too manifest, and in no branch with which I am acquainted is it so strong as in hunting circles. You have told me previously that if Hunts had to pay all the claims which might be made it would be impossible to finance them, and the sport would cease. Such a statement I should be sorry to believe. You cannot mean that devotees of this pastime, including many of the wealthiest people in the land, are unable or unwilling to pay for their own pleasure, and will give it up unless other folk, who have no share in the delights, pay an important share of the expenses. Is that an honest or honourable position to occupy? Suppose we applied the same principle all round, where should we be? Need I enlarge upon it? Yet that is the logic of

the business as you hunters put it. Practically speaking, you claim the right to take from others what is theirs and not yours. Should that be true, Fox Hunting in this country is doomed, with a few exceptions, and the sooner it is added to bull-baiting and cock-fighting the better. Of the total population 99'9999 per cent. will never miss it. Many will be better off for its cessation. If the one in ten thousand who desire its continuance wish to save it they must "Pay, Pay, Pay." George Eliott made one of her characters say: "I don't load my dice to make their side win." No one could expect you to do that, but you have loaded your own dice only too much in the past.

The nonsense which hunting people often talk is amusing, more so because they befool themselves to believe it as truth. Some time ago I saw an article written by another Master of Foxhounds which "takes the cake." By manipulating figures he made it out that the country was richer, by I don't know how many millions of pounds sterling as a result of fox hunting. That men who hunt expend this amount of money I do not question. The part which can be credited to hunting is very small indeed. What you have to estimate is the *additional*, not the total expenditure, that is, how many extra horses or servants you keep, how much extra fodder you buy, and so on. As against that has to be set the non-productive use of land and buildings, and of men who might be employed in other ways. My advice is, lie low on this aspect of the question, for, assuredly, if ever a true balance sheet is shown, the margin will not be on your side. "Let sleeping dogs lie," is a wise axiom.

Someone has said that "Civilisation consists in the accumulation of superfluities." It is well to recognise in this connexion that all sport is superfluous, and that the nation would go on just as well without it. You know me enough to agree that I have no antagonism to sport in the great majority of forms, and enjoy it as much as anyone, though I cannot afford to spend a thousand a year, or even a couple of hundreds in that way. Mine have to be more modest recreations. But at least I am prepared to pay for such sport as I enjoy, and when I cannot afford it, am content to go without. Being a superfluity, a mere excrescence on life, it is surely apparent that hunting or anything else must not be conducted to the hurt or loss of others. The farmer,

the cultivator, the stock-breeder, the poultry-keeper are all indispensable to the welfare of our people. Not only do they create a large part of the national wealth, but also they produce the food upon which we live, whereas the hunter is a spender of money, he produces nothing, and in the doing of it he often wastes much of his own and other people's property. Losing the one would mean starvation and national disaster. Sacrificing the other would only be a personal deprivation, affecting but comparatively few people. Therefore the producer must stand first, his interests are supreme, he is the predominant partner. If there is room for the other—well and good. He will add a picturesque element to the landscape, but nothing more. These may be unpalatable facts, but they are true nevertheless, and you have to realise that such is the case. What has to be brought home to your minds is that in the

greater part of the United Kingdom, fox hunting can only be followed on sufferance, and to placate those upon whom you are dependent for your sport you must descend from your high horse, and be prepared to discharge your just liabilities like men. Only thus can you continue much longer.

Have you, my dear lord, ever realised the utter meanness of the whole business as it is regarded by the various Hunts? I know one of these the aggregate income of whose members in every hour

is much greater than a small farmer or holder can earn by a whole year's hard, diligent labour. Do you wish me to believe the former cannot afford to pay the last-named if he loses fowls by foxes? You know as well as I do, it is not the ability but the will that is wanting. I can only characterise it as mean in the extreme, and so would you if not obsessed by old and antiquated notions.

Theodore Roosevelt when in England the last time said in one of his speeches that "Property belongs to man, not man to property," which was much wiser than some of his other utterances. That is in antagonism to the spirit of feudalism which yet remains in this country. Too often is the reverse apparent in act if not in word. Fox hunters are representative of a small section of the community who think that their pleasures and their pursuits ought to be the first consideration, and that the interests of everyone must be subservient to these. It will only be by mutual consideration and fairness of action, by equality of



A 211b. American Bronze Turkey Hen. [Copyright.]

opportunity, that the amenities of rural life can be preserved, not by penalising the struggling workers. It is not by lack of good will, or desire to harm your fellows that the present condition of affairs has been brought about. No one who knows you and those like yourself, can doubt the goodness of heart which has inspired the majority. But, my dear Lord Fitzhugh, that is not enough. You have all to try and look at the question from the other side as well as your own. Do not think

A chicken hatched in hell
Loves no other place so well.

From an intimate acquaintance over a long series of years with every class and section of the community, I am speaking from positive knowledge when saying that those who have borne losses caused by foxes with more or less patience, have no desire to quarrel with hunters or to interfere with their sport, but the burden has become so great and the injury so serious that they have resolved that an end shall be put to it in one way or another. The question is, are you going to find the remedy, or shall they? Remember "He is greatest who confers the most benefits," and apply that to the business in hand. May I be permitted to advise you to "agree with thine adversary quickly, whiles thou art with him in the way," lest a worse thing befall you.

There are tremendous forces around us which will not be ignored, and which it is necessary to keep in mind. Evolutionary influences are at work, and the newly expressed determination on the part of poultry-keepers to obtain what they regard as justice is but one evidence of the change here indicated. The question for you to consider is, which side are you willing to take? Are you going to fight these, or will you recognise the position and act accordingly? Rest assured that if fox-hunters will realise their responsibilities, will deal with such as suffer loss in order to afford them sport in a fair and generous spirit, there are none who desire to interfere with their pleasures. Had it not been for that innate love of hunting among all sections of the community, even those who can never be more than lookers on, it would have been stopped in many districts years ago. It says much for our people that they have submitted to an intolerable burden for so long. What you have to do is "Pay, Pay, Pay." If you cannot afford to do that, then your energies must be turned into other directions. An American speaking at a dinner recently, referring to motoring, said: "In London they gave two toots before they killed a man. In Chicago they only gave one toot, and that was far too short a preparation for Eternity." The double chance is yours.

Happiness is a comparative term. How seldom we see things as they really are. It is told of a shrewd widow who became a spiritualist, and at a seance called for the spirit of her late husband. She asked, "Is that you John?" "Yes," was the

reply. "Are you happy?" she queried. "Very happy indeed," was the response. "Are you happier than when on earth," she queried. "Much happier." "Tell me, dear, what Heaven is like," was her final request. "I'm not in Heaven," was the answer. *Verb sap.* Your satisfaction with things as they are is not the final test. It is, also, what the other man thinks and feels.

Yours suggestively,
ENOS MALPAS.

P.S.—One more story. A short-sighted old lady in a hurry to mount a tram-car, held up her umbrella and shouted to the driver of a passing vehicle, "Stop! Stop!" to which the driver replied, "Don't be in a hurry, mistress; it ain't your turn yet." It was a hearse.

Making Snug for Winter.

However carefully the enthusiastic poultryman may pride himself on keeping the fowl-houses, there is always a time, generally at the commencement of autumn, when a thorough overhauling of the premises, prior to the sorting of chickens and the mating up of breeding stock, will bring to light many defects, the repairs to which will do much to obviate disease and ensure success in the next season. An inspection of the interior of the houses on a rainy day will reveal spots where shrunken boards or sun-cracked felt admit the water. A constant drip on the back of a roosting fowl is the most common cause of rheumatism and pericarditis, and a damp floor is the surest means of limiting the egg supply. The leaking points should be marked with chalk and on the first fine day thoroughly repaired. Then the floors, nest-boxes, perches, and all wood fixtures will require attention, for which lime, paraffin, soap, and fluid disinfectants are necessary. Moulded dead feathers, if allowed to lie about, not only harbour but feed lice, and a floor caked with manure is a fine hot-bed for the culture of bacteria. Poultry-keeping is not so refined a hobby as many people suppose it to be, and the work, or at least its supervision, can very easily get behindhand. The wise fancier is he who will put his houses in order now, without waiting for the dark and wintry days. To do so then will be found to be much more irksome, and meanwhile disease and parasites will have got a good start.

Trickery with Live Poultry.

The *New York Produce News* states that live poultry brought for sale to the Jews are often in approaching that city from the west kept without food for twenty-four hours, but given plenty of water. They are then given indian meal mixed with red pepper, causing abnormal thirst, and fed with soaked stale bread, sand and gravel, thus adding greatly to their weight. It is estimated that in this way about a couple of million dollars is drawn annually from the pockets of purchasers.



Front View of College.

[Copyright.]

THE HARPER ADAMS COLLEGE AND THE LAYING COMPETITION.

REFERENCE has often been made in the ILLUSTRATED POULTRY RECORD to the paucity and inadequacy of instruction at agricultural colleges in this country. When, therefore, steps are being taken toward improvement, we are always glad to record the fact. For some time instruction in poultry-keeping has been given at the Harper Adams College, Newport, Salop, which institute is in a district where, on the one hand, there is a considerable though inadequate attention to poultry, more especially in the Potteries, and on the other a great need for advance. The Principal, Mr. J. Hedworth Foulkes, B.Sc., has always shown interest in poultry, but others have to be convinced of its importance. The lecturer in poultry is Mr. F. W. Rhodes, who is very keen. Between the two we anticipate that this college will exert a vast influence over the great area which it serves and lead to the adoption of progressive methods.

One of the most notable developments has been the institution of a vacation course in poultry-keeping for teachers, of which the first was a great success. The Staffordshire Education Committee, as was recently pointed out, is seeking to interest children in the rural schools, at several of which small plants have been laid down and teaching of this subject added to the curriculum. The course is well arranged, and it is satisfactory to note that those in attendance worked hard and derived great benefit. We hope that similar courses will be instituted elsewhere.

Perhaps, however, the most important step has been the selection of Harper Adams College by the Utility Poultry Club for the twelve months' laying competition which commenced in October. The ground selected is quite close to the college, is very even, so that as far as possible every pen is on a perfect equality, and although it has a clay sub-soil, yet there is a good covering of loam, and as it is arable land recently sown in clover, it is perfectly

fresh and sweet. The runs are well laid out with convenient avenues between, and each lot of birds has two runs for use alternately. The houses are double, and trap-nests raised above ground are used, thus affording the maximum of scratching space. We give herewith some views of the pens and also the college buildings. As it is undesirable to provide more than a reasonably suitable place, we were very favourably impressed with ground



The Type of House being used in the twelve months' laying competition.

[Copyright.]

and position. Mr. Wolff, formerly in the employ of Mr. Lionel Phillips, and later in that of the Duke of Sutherland, is acting as manager, and in his capable hands we anticipate that satisfactory results will be achieved.

SOME RECENT POULTRY EXPERIMENTS.

Egg-Production (*Maryland Agric. Expt. Station, Bulletin 157*).—The effect of retaining fowls for egg-production after they have passed their second year is dealt with as one of the causes which account for a low average yield of eggs in this State. A flock of 60 pullets selected from a larger flock of 240 White Leghorns was used for the experiment. During the pullet year the 60 birds produced 10,280 eggs, or an average of 171.3 eggs per bird.

In the second year the same flock produced 8,943 eggs, or 149.05 eggs per bird.

In the third year the number of eggs produced was 6,907, or 115.1 eggs per bird.

Thus, while the decrease in the number of eggs per bird for the second year as compared with the first year was 22, the decrease in the third year as compared with the first year was 56.2 eggs per bird. This represents a considerable loss to the farmer, and one object of the experiment was to bring this loss to his notice.

The difference in production between the first and second year was much less marked, and was not sufficient to justify the discarding of second year birds, especially as such stock is well suited for breeding purposes.

A detailed record is given of the eggs laid by each individual bird during the three years, as ascertained by the use of trap-nests, and this record afforded information as to the month in which the first egg was laid by both good and poor producers during the pullet year. Of five birds which produced 200 eggs or over, all (100 per cent.) laid the first egg in November; of 56 birds producing 150—200 eggs, 55.4 per cent. laid the first egg in November, 30.4 per cent. laid the first egg in December, and 14.2 per cent. laid the first egg in January; of 109 birds producing from 100—150 eggs, 23.9 laid the first egg in November, 48.6 per cent. in December, 23.9 per cent. in January, 3.6 per cent. in February; and of 54 birds producing less than 100 eggs, 3.6 per cent. laid the first egg in November, 31.5 per cent. in December, 44.4 per cent. in January, 13 per cent. in February, and 7.4 per cent. in March. It is suggested that these figures afford a guide to the farmer in Maryland in selecting his stock, for by picking out the birds which begin to lay in November and December he is likely to secure a high percentage of good producers.

A system of marking poultry, either by means of leg-bands or by punching the web of the foot in newly hatched chickens, is strongly recommended in order that the age of birds may be accurately known and that the farmer may be able to eliminate his old fowls systematically.

An account is also given of experiments conducted with regard to the time required for eggs to become fertile after a male has been added to the breeding-pen, the persistence of fertility after

the male has been removed from the breeding-pen, and the effect of feeding maize on the colour of the yolk of eggs.

Poultry Fattening (*U.S. Department of Agriculture, Bureau of Animal Industry, Bulletin 140*).—Observations regarding the methods employed by two companies working large poultry-fattening plants in the Middle West, including a comparison of the results obtained at different feeding stations, the success attending different methods, and the comparative feeding value of different rations are discussed in this Bulletin.



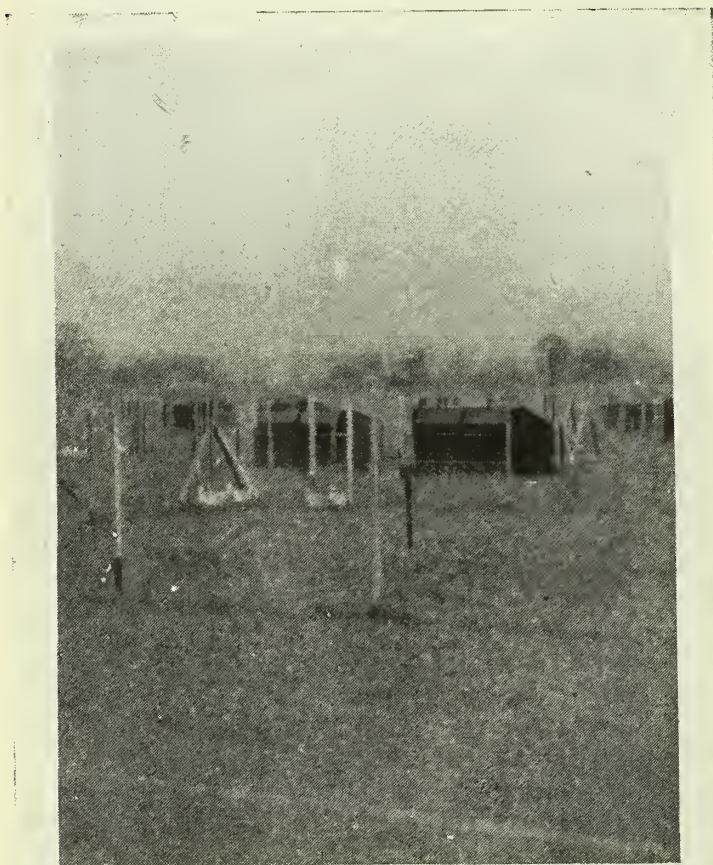
The Principal of the Harper Adams College and the Poultry expert. Mr. J. Hedworth Foulkes is on the left in the above photograph. [Copyright.]

The observations and experiments had reference almost entirely to trough feeding.

The total cost of food per pound of gain averaged in an experiment where 43,944 birds were fattened for from 6 to 10 days, 6.45 cents, and in a second experiment in which 61,706 birds fed from 6 to 15

days the cost averaged 7.74 cents. The average total cost of food and labour per pound of gain for all the birds in both experiments was 9.09 cents, the average cost of food alone 7.10 cents. The cheaper gains were made in shorter feeding periods (7 or 8 days) and by light chickens.

The Improvement of the Farm Egg (U.S. Department of Agriculture, Bureau of Animal Industry, *Bulletin 141*).—In this Bulletin the conditions which prevailed in the egg trade in the State of Kansas are considered, and an account is given of the causes which influence quality in eggs; special reference is made to the loss which arose owing to the system of buying eggs by number without having regard to quality and to the lack of care in handling the product by the farmer and merchant.



General View of the Competition Pens at the Harper Adams College. [Copyright.]

The methods adopted for improvement consisted in the organisation of buyers who agreed to adopt a system of testing eggs at the time of purchase, in a comprehensive study of the conditions in the field and in the effort to educate the Kansas farmers.

Autumn and Spring Chicken Rearing (Harper Adams Agricultural College, *Report on Field Experiments, 1911*).—An experiment was carried out to determine the cost of rearing *autumn hatched chicks* to a killing age, to note the rate of increase in weight week by week for food consumed, and to compare the cost of autumn and spring rearing.

A lot of 16 chickens was selected for the autumn rearing experiment in 1910. For the first 12 weeks they were fed entirely on dry food; from that time until the end of the eighteenth week, when they were sold, they received soft food during the day and whole barley for the evening feed.

At the end of the eighteenth week the average weight per chicken was 3lb. 12½oz., the food consumed per chicken 14lb. 9oz., the average cost per chicken, including expense of hatching, 2s. 0.15d., and the market value per chicken 3s.

In the case of the spring rearing experiment the exceptionally hot weather which prevailed in the spring of 1911 was unfavourable to growth, and the results are not regarded as conclusive.

Tests were also carried out to demonstrate how the number of fertile eggs is affected by the conditions under which the stock birds are kept. These tests suggested, among other conclusions, that the percentage of dead chickens in the shell does not bear any relation to the proportion of unfertile eggs.

Poultry Houses and Fattening Chickens (Ontario Department of Agriculture, *Bulletin 189*). This Bulletin contains general information regarding poultry-keeping on the farm. The result of experiments conducted in order to ascertain the most suitable type of house for use on farms in Ontario pointed to the fact that the low, open-front house kept the stock in better health and required less labour than any other type.

The result of certain experiments in the fattening of chickens by trough feeding are recorded, and show that the average profit in three weeks' feeding was from 13 to 15 cents per bird.

Tuberculosis of Fowls (Ontario Department of Agriculture, *Bulletin 193*).—The spread of avian tuberculosis in Ontario, where it has been found that the poultry industry has suffered seriously in consequence, led to the issue of this Bulletin in order that information concerning the disease and suggestions for its control might be made available. The nature of avian tuberculosis and the means by which it may be transmitted from outside sources are indicated, and the view is expressed that it is "intertransmissible between the human or bovine and the avian species to a certain extent," that "the avian bacillus, so called, must be considered as not a distinct species, but merely a variety, the differences in character of this organism from the bovine or the human type being due to environment."

The spread of the disease in the flock through the droppings of affected birds was confirmed by microscopic examination, which revealed bacilli as present in the droppings in twenty-nine cases, in which the intestines were proved by subsequent post-mortem examination to be tubercular. Reference is made to the difficulty of detecting the disease in its early stages owing to the fact that the birds exhibit no definite symptoms; emaciation is usually the first symptom to be noticed.

FANCIERS AND FANCY MATTERS.

WYANDOTTE ITEMS.

The question of adopting an international standard is evidently still under discussion by some of the specialist poultry clubs, although it may truly be said that things move slowly in this direction. However, the White Wyandotte Club went into the subject at a committee meeting held at the Dairy Show; and it was unanimously resolved that, the English standard being perfectly satisfactory, no sound reason presents itself for any alteration. That is another "Nay," and, so far, I think the "nays" have it!

At the same show, where, as is generally known, most specialist clubs hold their annual gatherings—and some of the clubs their only meeting of the season—the Partridge Wyandotte Club, following its progressive policy, appointed a sub-committee to revise the present standard for the variety, with a view to making it conform more accurately and definitely to the modern requirements of breeders. The work is in the hands of such experienced fanciers as Messrs. W. M. Elkington, F. W. Myhill, R. Watson, and J. Wharton, and the result of their deliberations will be reported to an extraordinary general meeting, which is to be held on the first day of the great York Show on the 10th of the present month.

A third Wyandotte Club, which met at the Dairy Show and did "something useful," was that for the Blue, in altering the standard for the variety as far as colour is concerned. In consequence the cock's body colour is to be a rich clear blue (free from both lacing and smokiness), and this is to count before the lighter or silvery shades and the darker or smoky. The top colour of the cockerel, is to be a darker shade of blue, not black, approaching to the colour of the body rather than to black, and it must not be white, sandy, chocolate, or any other tint—just blue. The hen's colour is set down as a rich blue, clear from smokiness, and the neck hackle is to be of the same shade as the body, and, which is of great importance, yellow legs are imperative, even at the cost of some lacing. This is not the first alteration of the standard that has been made by fanciers of the Blue Wyandotte, but, in my opinion, it is by far the best suggestion up to date; and since yellow legs the fowls must have, even if they have to be somewhat laced, I can see the next alteration in the standard demanding a good laced blue similar to the Andalusian, and the Blue Langshan and Orpington.

THE PLYMOUTH ROCK.

One of the oldest breeds before the public to-day, and one, too, which deserves well of the strictly utility poultry-keeper, is the Plymouth Rock; and yet even its most ardent admirer cannot truthfully say that it is as popular as it should be. For some time the Barred variety has appeared to put the

other branches of the family entirely into the background, perhaps because it is generally catered for at the shows, and seldom do the whole (or self) colours get a look in.

The Barred, however, has been going somewhat downhill of late; and I cannot help thinking that this is attributable almost solely to the fact that too many fanciers, the vast majority of them, are so keen on making it a two-pen variety—insisting that to produce cockerels and pullets fit to win in keen competition it is absolutely essential to have two distinct matings. Of course this is, in the words of the schoolboy, "all fudge," since it is well known that at least one Plymouth Rock breeder—and not a raw recruit to the ranks by any means—succeeds year after year in producing "champions" of both sexes from the one mating. If the Plymouth Rock clubs are wise, therefore, they will let it be known to all and sundry that no longer is the Barred a two-pen variety. They will then, I feel sure, greatly increase their membership, and thus place the breed right in the front rank once more.

It may be mentioned that in addition to the original variety there are the Black, the Buff, and the White, while those in search of novelties are "threatened" with a Blue, a Golden-Barred, a Columbian, a Partridge, and a Spangled; and, of course, I must not overlook the Rosecombed Barred. There is now, therefore, ample scope to make the Plymouth Rock Fancy a truly great one. The breed is a grand all-purpose fowl in the utility line, the females being very good layers—and especially throughout winter—of rich coloured eggs. The chickens are hardy to a degree, and quite satisfactory growers, while the cockerels at five to seven months are not to be despised when dressed for the table. There is, admittedly, a White Plymouth Rock Club, as well as one solely to look after the interests of the Buff; but like so many of these single variety clubs they only "bob up serenely" when the big shows are on. It is always a pity when a club is allowed to lie dormant in what may be termed the "off" season; but unfortunately this is often the case. Small wonder, perhaps, that the majority of fanciers overlook a good breed.

AN IDEAL ESTABLISHMENT.

Such is Mr. Charles Thellusson's poultry "plant" at Brodsworth, about five or six miles from Doncaster railway station; and I question if any fancier has such an ideal place in which to rear exhibition stock and prepare the birds for the show pen. The farm is part of the 8,000 acre estate that surrounds Brodsworth Hall, Mr. Thellusson's Yorkshire residence; and since it is situated at a high altitude one can imagine that poultry reared there must be especially hardy. They are, certainly.

but the runs are so well protected from the north, the east, and the west, that the birds do not get the full force of the winds from those quarters. White fowls are the favourite varieties at his ideal establishment, White Plymouth Rocks, chiefly; but there are Wyandottes, Faverolles, Malines, Bresse, Cochins, Silkies, and rosecomb Orpingtons, as well as Rosecomb, Plymouth Rock, Japanese, Pekin, and Orpington Bantams, all "as pure as driven snow" kept at the Brodworth Poultry Farm, and in addition there are Ermine and Salmon Faverolles, and Silver Campines.

The whole establishment is under the able management of Mr. William Foote; and I know of no better fancier than he when it comes to getting white fowls ready for the show bench. No doubt in this direction knowledge is the great thing; nevertheless, Mr. Foote has at his command everything essential for the purpose, and I have yet to see the show house that equals the one at Brodworth. It is a splendid building some 150 feet or more in length, and is divided into a training room, a wash-house, a drying room, a basket room, and an office. The first-named section is about eighty feet long, and in it there is accommodation for some four hundred birds. It contains four rows of full-sized exhibition pens, with compartments for trios of birds underneath them; the aisles are five feet wide, and it is well lighted from above, and it is, undoubtedly, the finest building of its kind in the country.

The houses for the fowls are in keeping with such an elaborate building; and as the accommodation so the birds at Brodworth, Better quality poultry there cannot be, and the fact that during the past two years or so—it is only quite recently in his career that Mr. Thellusson has gone in extensively for exhibition stock, although poultry breeding has been one of his hobbies since his early days—he has won over 7,000 prizes, and among them "firsts and specials" at the classical events and in the best competitions, is proof of this.

AN IMPORTANT POULTRY ACT.

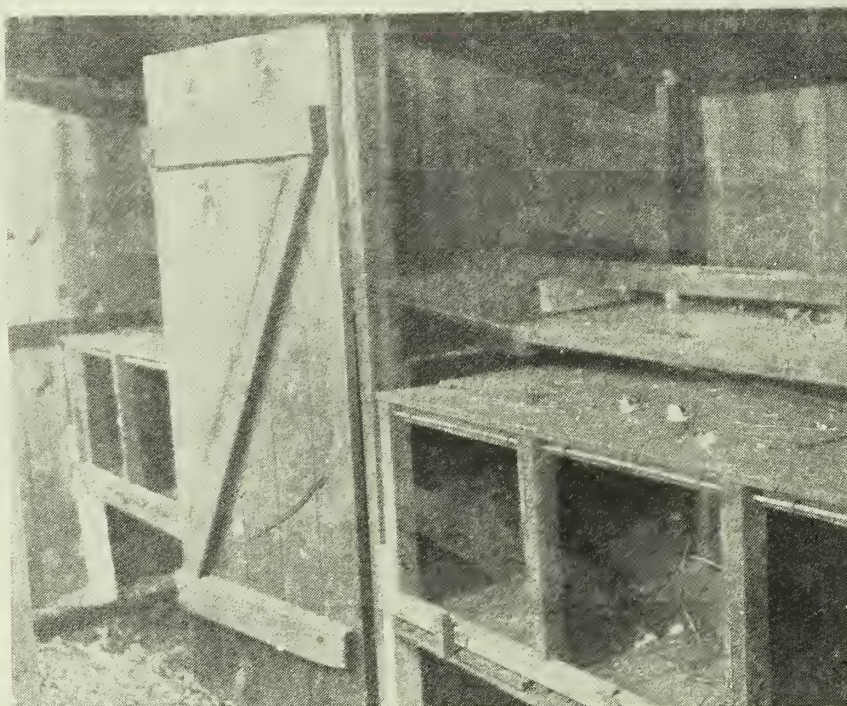
An Act to enable Orders to be made under the Diseases of Animals Acts for protecting Live Poultry from unnecessary suffering, and for other purposes connected therewith.

[18th August, 1911.]

BE it enacted by the King's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

1.—(1) The Diseases of Animals Act, 1894, as amended by any subsequent enactment, shall have effect as if, among the purposes for which Orders may be made under section twenty-two of that Act,

there were included the following purposes:— (a) for protecting live poultry from unnecessary suffering while being conveyed by land or water and in connexion with their exposure for sale and their disposal after sale (b) for requiring the cleansing or disinfection of receptacles or vehicles used for the conveyance of live poultry, and for the purposes of an Order made under this Act the Diseases of



Interior of Laying house at the Harper Adams College, where the 12 months' Competition is now being held. The trap nests, perches, and dropping boards are plainly visible.

[Copyright.]

Animals Act, 1894, shall be construed as if the expression "animals" included live poultry.

(2) An inspector, for the purpose or enforcing an Order under this Act, may examine any live poultry under any circumstances to which the Order relates and any receptacle or vehicle used for their conveyance; and may enter any vessel or premises in which he has reasonable grounds for supposing that there are live poultry in course of conveyance or packed for conveyance.

(3) The expression 'poultry' includes domestic fowls, turkeys, geese, ducks, guinea-fowls, and pigeons.

2. This Act may be cited as the Poultry Act, 1911; and the Diseases of Animals Acts, 1894 to 1909, and this Act may be cited together as the Diseases of Animals Acts, 1894 to 1911.

CO-OPERATIVE MOTOR SERVICE IN THE POULTRY INDUSTRY.

ONE evening after dinner we were chatting with a prominent agriculturist in the North of England, who has done a great deal towards the development of poultry production in his own immediate neighbourhood. The district in which he lives is a little more than twenty miles from a great industrial centre to which the produce is sent, but the goods have to traverse what is practically two sides of a triangle, with, in the case of lighter products, one transshipment, besides which they have to be sent nearly two miles to the local station. He foreshadowed the time when by light motor vehicles the goods could be delivered direct to the retailers in less time and at less cost than is now possible.

Recently we came across a similar case in the South of England. The natural point of sale is less than eight miles by road from the village where the eggs and chickens are purchased. If sent by rail there is, first, a journey of nearly a mile to the station; second, another of double this distance with two junctions, where the cases of eggs have to be changed; and third, delivery at the far end. Thus every case of eggs has to be in five vehicles before delivery can be effected. In this instance, it is speedier, safer, and cheaper to use a light motor and deliver by road.

There are thousands of such cases throughout the country, and undoubtedly one solution of the problem in respect to the transit of perishable products, in which speed, as well as avoidance of handling, is important, is the employment of light motor vehicles. For the transit of eggs these will require to be specially built, to eliminate jolting.

Where the producers are too distant from their markets, and the goods have to be sent by rail, a further development will be the employment of motor-vans for collecting products over a wide area, thus expediting delivery. The railway companies are fully alive to the importance of this question, and by the fixing of inclusive rates and the reduction of transit charges can do much to develop our rural industries and stimulate production.

We look forward to the time when motor-cars will be utilised in many ways, but in none more advantageously than in the fattening industry. Instead of using a horse and cart, the latter of limited capacity, for the collection of lean birds by higglers, there should be these quicker vehicles, so that a much wider area can be traversed and a larger load brought back in the one journey.

Co-operation among our rural population holds the secret of successful development. It may be applied in many ways not yet attempted, one of which is collection and delivery by motor-lorries. In this manner remote districts will be linked up with the consuming centres, purchased goods can

be brought back at less cost than now, and the intermediate and terminal charges avoided.

In brief, the motor-car is destined to accomplish for less favoured areas what the railways did for those on direct routes, whether in conjunction with or independent of the great companies.

A striking example of the important part the motor-car can play in the conduct of a poultry farm came under our notice a week or two ago. The farm in question is situated in the Midlands, five miles from a railway station and equidistant from a market town. Three years ago the proprietor came to the conclusion that unless he could devise some means of rapid and regular traffic his farm would speedily come to an end. He endeavoured to interest some of his neighbours in a scheme of co-operative transit, but could not succeed in securing their support.

At length he decided to invest in a motor-car, and, anxious to obtain the best, he bought a 15-h.p. Talbot. This he has now used for nearly three years, and found it of the utmost value. He is enabled to market his produce in the most rapid manner, and at the same time very cheaply. The cost of running is extremely low, while when it is not in use it is not "eating its head off."

Foxes in New South Wales.

The *Agricultural Gazette of New South Wales* says the officers of Wagga Experiment Farm have found that young rabbits just furred make excellent baits for foxes. A small incision is made with a knife in the breast of the rabbit, and as much powdered strychnine as will rest on the point of the knife is put in. These baits should be placed in the neighbourhood of rabbit warrens. Another good bait, at lambing time, is made by splitting the head of a dead lamb, leaving half the brain in each half of the skull, and burying the strychnine in the brain.

Western Canada.

Mr. A. G. Gilbert, on his tour of observation in the Western Provinces of Canada, already referred to, reports that "Eggs and poultry are in great demand in Manitoba, Saskatchewan, and Alberta. All the provinces named are suited to egg and poultry production, but none is so well adapted to turkey and fowl as Alberta. The dry and sunny weather is particularly well suited to turkey raising. Turkeys are worth a high price per pair, and the better quality of poultry is hard to obtain. The great bulk of the stock throughout the country is nondescript. There is not only a demand for market poultry of the right type, but there is a call for fine pure-bred birds for breeding purposes."

POULTRY COOKERY.

THE CHRISTMAS TURKEY.

THE old-fashioned Christmas dinner of roast beef, plum pudding, and mince pies seems, in the majority of households, to have become almost, if not altogether, a thing of the past, a turkey now being regarded as a more suitable item to occupy the place of honour. Whether this is a change for the better or otherwise is a point on which people are very undecided, as old-fashioned folk have a strong tendency to cling to old-fashioned customs. Those who prefer the "roast beef of old England" need no directions as to its cooking and serving, but those who intend to have a turkey may find the following recipes useful in furnishing a pleasing variety of the same dish.

Turkey in Batter.—Prepare the bird in the usual way, then carefully remove the breastbone and fill up the cavity thus formed with a delicately flavoured forcemeat prepared as follows: Boil a medium-sized spanish onion until nearly soft, then chop it very small and mix with it a large breakfast cupful of finely sifted stale breadcrumbs, two ounces of beef suet chopped small, a dessertspoonful of minced parsley, a tablespoonful of strained lemon juice, and a sufficient seasoning of salt and pepper; mix the various items thoroughly and bind them together with beaten eggs until the whole is well moistened. Press the forcemeat in very firmly, then cover the breast of the bird with several folds of thickly buttered paper, and roast either in a well heated oven or before a clear, moderately hot fire. When half cooked, take away the paper and pour over the birds some good frying batter; let this get dry, then pour over some more batter and continue in this manner until the bird is thickly and evenly coated in every part. When finished cooking it should be coloured a nice golden brown and present a crisp, appetising appearance. Serve on a very hot dish garnished with sliced lemon and sprigs of fresh parsley and accompanied by some well-made Hollandaise sauce which is prepared as follows: Put three ounces of fresh butter into a saucepan and as it melts stir in an ounce and a half of fine flour; beat well with the back of a small wooden spoon until perfectly smooth, then add gradually three-quarters of a pint of milk and stir constantly until the sauce boils; when this point has been reached draw the pan on one side and stir in four large tablespoonfuls of cooked vegetables, such as carrots, turnips, cucumber, &c., &c., which have been stamped out in small fanciful shapes, and the yolks of three fresh eggs; add a pleasant seasoning of salt and pepper and continue stirring constantly until the whole is thoroughly hot, taking great care to avoid boiling point—an accident which would cause the eggs to form into lumps and so render the sauce quite unfit for use.

Galantine of Turkey.—Pluck, singe, and draw a fine plump turkey, then divide it down the breast, cut off the wings and the neck, and bone it carefully without in any way injuring the skin. Remove

part of the flesh from the inside, then lay the bird out flat on the table, skin downwards, and truss the legs neatly and firmly inside; cover the whole with a layer, about an inch thick, of pleasantly seasoned forcemeat, then put a layer of the meat taken from the turkey and cover this with small slices of boiled ham and tongue, quarters or slices of hard-boiled eggs, a few sliced truffles, if such are to be had, some pickled walnuts cut in large dice, and a liberal sprinkling of chopped parsley over all. Season pleasantly with salt and pepper and add another layer of forcemeat, then turn the skin over the edges and roll the turkey up as firmly as possible, after which sew it up very securely so as to prevent the contents escaping. Cover the galantine thus formed with slices of fat bacon cut very thin, tie it firmly in a strong cloth, and simmer it steadily in a plentiful supply of boiling water from four to five hours—the exact time to be regulated according to the size and age of the bird. As the liquor in the saucepan boils away more must be added in order to keep the galantine entirely covered all the time. When done enough, remove the saucepan from the fire but leave the galantine in the liquor until nearly cold, then place it between two strong dishes, put a heavy weight on top and leave it so until next day. When required, remove the cloth, free the galantine from any fat which may cling about it, and brush it over with two or three coats of glaze, letting each coating dry before adding the next. Just before serving cut a thin slice from each end of the galantine, when, if the items inside have been arranged tastefully, the appearance will be most effective owing to the blending of the various colours. Garnish with roughly chopped aspic, boiled beetroot cut in fancy devices, hard-boiled eggs cut in quarters, and plenty of fresh, crisp parsley.

Cold Boiled Turkey.—Choose rather a small but plump bird and, after preparing it in the ordinary manner, boil it carefully in good white stock, or water, until thoroughly cooked but not in the least overdone, then set it in a cool place, and when quite cold remove the fastenings and mask the bird over entirely with good bechamel sauce made very thick. Place the turkey on a dish and ornament the breast with a tasteful design composed of lean cooked ham, tongue, boiled beetroot, pickled walnuts and lemon rind, all stamped out in small fancy shapes, and press the items in rather firmly so as to keep them in place. Garnish the edge of the dish with sprigs of parsley, or pleasantly seasoned watercress and tiny heaps of variegated aspic jelly just roughly chopped.

Roast Turkey.—There are several methods of preparing a turkey for roasting. Some people like it trussed in the same manner as a fowl and roasted without stuffing of any kind, and this is an excellent plan for those who rather fear the richness of the forcemeat. The pure flavour of the bird is thus enjoyed more fully, perhaps, and when cooked in this way the dish should be simply garnished with fresh, crisp watercress, and served with some good pleasantly flavoured gravy as an accompaniment.

The more popular method, however, of cooking a turkey is to stuff it either with a good forcemeat—several kinds being suitable—or with roasted chestnuts, or sausage meat. Tie a buttered paper over the breast, after the bird has been trussed, of course, roast it either before a clear hot fire or in a well-heated oven, the former is generally considered the better way but it is much more difficult and not always convenient. Baste frequently while cooking and twenty minutes before the bird is done enough, remove the paper from the breast, dredge a little flour over, and baste almost constantly so as to obtain a nice frothy appearance and a rich brown colour. Serve on a very hot dish garnished round about with a ring of carefully cooked sausages, sliced lemon, forcemeat balls, curled bacon and sprigs of fresh crisp parsley, and accompanied by good brown gravy, and either bread or chestnut sauce.

Glazed Turkey.—Those who are not very partial to the business of carving at table will doubtless fully appreciate this dish. After the turkey has been carefully cooked allow it to get quite cold, then cut it up, as neatly as possible, into pieces a convenient size for serving; trim these neatly and season pleasantly with appropriate items, then give each piece two or three coats of good glaze in order to secure a clear bright surface. When quite firmly set, dish up tastefully on a fancy dish-paper, garnish round about with slices of boiled ham and tongue arranged alternately and interspersed with sprigs of fresh parsley, or well seasoned watercress, and serve accompanied by a well-made, pleasantly seasoned salad. *Note:* A most delightful substitute for a green salad is the following: Take equal quantities of boiled beetroot, boiled potatoes as even in size and shape as possible, and fresh cucumber, and cut them in slices about a quarter of an inch thick; put these into the salad bowl with a seasoning to taste of salt, pepper, fine salad oil and vinegar, and toss gently so as to distribute the seasonings equally, then ornament the surface tastefully with hard boiled eggs, the whites cut into julienne shreds and arranged crosswise, and the yolks rubbed through a sieve and sprinkled over all.

COLLEGE CROFT AT ALNESS.

Report on Year's Working.

An interesting and instructive report has recently been published by Mr. G. G. Esslemont, general organiser for the North of Scotland College of Agriculture, regarding the year's work at the College Experimental Croft at Alness, from which we take the following extracts.

THE POULTRY STATION.

The primary purpose of the poultry croft is the production of eggs and fowls for distribution amongst crofters, at reduced prices, to improve their poultry stocks. The breeds kept have mostly been raised by careful selection from the small initial stocks purchased at the start of the station, and include White Wyandottes, White Leghorns, Black Leghorns, Rhode Island Reds and Buff Orpingtons. The distribution scheme was put in operation for the first time last season, but notwithstanding its being largely in the nature of an experiment, the demand for both fowls and eggs was most encouraging. With regard to the latter, the demand was greater than the supply, and a number of orders had to be refused and are on the waiting list for next season. There were about 300 dozen eggs and 100 pullets and cockerels of the various breeds distributed in the course of the season. In this connection it is of interest to note that the orders were not confined to Ross-shire, but extended throughout the area to Aberdeenshire and even Shetland.

The eggs and fowls not required for stock purposes and for distribution were sold at market prices.

Last season the breeding pens averaged about 15 fowls each, but in order to meet the growing requirements, provision has been made to increase this number to about 24 each. For this purpose, the pens have been extended and the necessary additional equipment provided.



A MIXED FLOCK.

[Copyright.]

TRAP NESTING EXPERIMENT.

In addition to the general work of the station, a trap-nesting trial was carried out with pens of pullets of the various breeds. The trial was continued for six months with most interesting results, and the information obtained will be useful in the selection of pullets for the breeding pens and for teaching purposes. The tests will be continued for several seasons, and, if any useful purpose is to be served, the results will be published in leaflet form. Perhaps the most interesting result of the trials is the difference shown between the best and the worst layers. For example, among the White Wyandottes, the best layer produced 90 eggs in six months and the worst 38; Black Leghorns, the best 88 and the worst 61; Rhode Island Reds, the best 196 and the worst 68. In these trials the fowls were all treated alike, and only a moderate diet suitable to young breeding was allowed.

FATTENING FOR THE MARKET.

An interesting and instructive experiment was also carried out in the fattening of young poultry for market. About 200 chickens were reared for the purpose, and fed and sold to the best advantage. An accurate account of the expenditure and income was kept, but a considerable loss is to be recorded under this head. From the experience obtained it would appear that with the present high price of feeding stuffs, and with no suitable local market, it will not pay a crofter to rear poultry for market purposes only. It is not proposed to continue this experiment.

Some interesting tests were also made in the feeding of young chickens, and the information obtained is being utilised for instructional purposes.

The visitors' book reveals a large number of visitors to the croft in the course of the year. The list embraces names from every county associated with the college, and even far beyond. Now that the various schemes have been put in operation, arrangements are being made to conduct public demonstrations to show the methods of management, and to explain the results of the work generally.

THE CROFT.

The croft, which is wholly arable, is worked on a five course rotation, and the crops grown are those usually associated with this. Last year's grain and turnip crops were exceedingly good considering the quality of the land, but the dry season acted adversely on the grass and hay crops. About 40 qrs. of oats were threshed from eight acres of crop, and the swedes yielded about 24 tons to the acre. The produce not required for feeding purposes was sold locally at current prices.

To understand the work that is being done at the croft, it is necessary to recall its poor condition when taken over by the college. In addition to the routine work of a five course rotation, considerable attention is being given to the improvement

of the land and the surroundings of the steading. The cost of extra labour, manure, etc., for this added considerably to the year's expenditure, but it is hoped that the work will serve not only to increase the productiveness of the land, but also to demonstrate practical and profitable methods of improving crofter land in the district. The appearance of the crops this season is very encouraging and gives confidence in the soundness of the methods adopted.

STATEMENT OF INCOME AND EXPENDITURE.

With regard to the financial statement, it is to be remembered that much of the poultry produce under the scheme is sold below cost price; also that the poultry and field experiments are unremunerative. The following is a summary of the income and expenditure for the year to July 31st, 1912:—

INCOME.									
I. The Croft—		£	s.	d.	£	s.	d.		
Cattle sold ...		88	14	9					
Crops, etc., sold ...		32	19	4					
Pigs sold ...		15	19	3					
					<hr/>				
					137	13	4		
II. Poultry Station—									
Eggs sold ...		31	9	9					
Poultry sold ...		31	14	8					
					<hr/>				
					63	4	5		
					<hr/>				
Total income ...					200	17	9		
EXPENDITURE.									
I. The Croft—									
Rent ...		15	0	0					
Taxes & Insurance ...		2	15	9					
Wages of Manager ...		40	0	0					
Casual Labour, Threshing, etc. ...		9	2	5					
Manures, Seeds, etc. ...		22	3	11					
Feeding Stuffs ...		13	15	1					
Stock Purchased ...		13	4	9					
Tradesmen and General Repairs ...		9	4	10					
Miscellaneous ...		4	19	11					
					<hr/>				
					130	6	8		
II. Poultry Station—									
Wages ...		20	0	0					
New Equipment and New Pens ...		29	10	1					
Foods ...		32	10	2					
Stock Purchased ...		8	9	10					
Casual Labour ...		3	0	0					
Carriages ...		2	4	0					
Advertising ...		1	9	6					
Official Opening Expenses ...		4	8	5					
Postages, etc. ...		4	10	3½					
Miscellaneous ...		3	18	5					
					<hr/>				
					110	0	8½		
III. Field Experiments—									
Manures, Seeds, Apparatus, etc. ...		11	11	9					
					<hr/>				
Total Expenditure ...					251	19	1½		

TURKEYS AT THE CRYSTAL PALACE SHOW.

THE turkeys made an especially good display at the Crystal Palace Show this year, and this was due in no small measure to the fact that the White Turkey Club held its show in conjunction with the International. The club is yet quite in its infancy, but such is the enthusiasm of its hon. secretary, (Mrs. de Bathe of Hartley Court, Reading) and members, that the entries for the four classes reached the satisfactory total of forty-seven. Year after year have classes been scheduled for this charming variety of turkey, but they have invariably been cancelled. It was a great pleasure, therefore, to see such a fine array last month, and the pity is that a more convenient place for the staging of the birds could not be arranged.

There were twelve entries of cocks, and in this class the first prize went to Miss Sibelle M. Corbett (Bridgnorth Salop), for a big bodied and pure coloured bird of grand carriage. The second, shown by Mr. J. Carlton Hunting, (Great Missenden), was also an exceptionally fine specimen and penned in perfect condition while the third, belonging to Mrs. W. F. Inge, (Tamworth) was of rare quality though hardly so big. Mrs. Inge won both first and second prizes in the hen classes—ten entries—with very big and typical birds of beautiful colour, while the third prize went to Lady Harlech, (Oswestry), for another really charming hen. In both of these classes Captain Max de Bathe (Reading) won the fourth prizes with high quality birds. In that for cockerel or pullet—sixteen entries—Mr. J. Carlton Hunting secured the first and second prizes, and Mr. Arthur E. Ward, (Mobberley, Cheshire) third with pure coloured birds of splendid type, the winner gaining the award on size alone, while Mr. Frank May (Radlett, Herts.) won the fourth prize. The winners in the selling class, £2 2s. limit and nine entries, were Captain Max de Bathe first, Mr. Frank May second, Mrs. Fred Egerton third, and Mrs. J. H. Cuthbert, (Hexham) fourth.

The Bronze Turkeys were more numerous than the Whites, and seldom has there been a better display of quality. Mr. Thomas Abbot (Wymondham, Norfolk) had the best of the eleven cocks,

and a truly magnificent bird he was, showing the bronzing to perfection. The second prize went to Mr. J. H. Fowler (Great Missenden, Bucks) for a stout boned cock of splendid colour, while the third and fourth prizes were awarded to Mrs. Gage Harper, (Hadleigh, Suffolk), these birds being big and typical but hardly of such bright colours. In the hen class—eleven entries—Mr. Thomas Abbot again won the first prize, but there was not a great deal between this bird and the second prize winner shown by Mr. William Johnson, (Church Stretton, Salop), both being big, of rare shape and colour, and with plenty of bone, while the third owned by

Mr. James Woods (Tyronne, Ireland), and the fourth exhibited by Mr. H. J. Cattell, (Marston Green, near Birmingham) were birds of grand quality. There were eighteen cockerels entered, and in this class Mr. Cattell carried off the first prize and Mr. Herbert E. Wendon (Lawford, Manningtree) the second, both birds being very well developed and with particularly brilliant bronzing. Mrs. Gage Harper won the third prize and Mr. George Partridge (Kidlington, Oxford), fourth, with big cockerels, though hardly equal to the others in "fire." Mr. Thomas Abbot also headed the pullet class—thirteen entries—and thus secured three of the four first prizes, truly a great achievement.



An American Bronze Turkey Cock. [Copyright.]

ment. The bird was indeed a fine exhibit and well deserved her win, although Mr. Cattell with his three entries had the honour of taking the second, third, and fourth prizes with a very creditable trio.

R.I.P.

There is mourning at Oregon Agricultural College. Miss Corvallis, the famous Plymouth Rock hen which laid 259 eggs in her first year, weighing 32½lb., is no more. A ruptured oviduct was the cause. Overwork kills hens and humans.

Drying eggs in China.

A gentleman who recently called upon us from China stated that the Chinese practice very largely the method of evaporating eggs and selling the white and yolk in a dry state. Perhaps some of our readers in the Far East can enlighten us on this point.

THE BACK-YARD FANCIER.

OF the various types and classes of men who interest themselves in the Poultry Fancy, none is more pleasant to meet at a show than the back-yard fancier. None is keener, and that is a valuable recommendation where so many are *blasé* in the pride of their knowledge and experience of shows in general. The back-yard fancier, as I judge him, is a simple and very enthusiastic man, a trifle egotistical (because of his enthusiasm); over-inclined, perhaps, to criticise the judge's awards, but possessed of a good deal more practical knowledge than most of us—a man the Fancy should encourage.

To look into the ways and means and possibilities of poultry-keeping, the back-yard hobby is interesting as bringing to light that which is odd and uncommon-place in the life of the poor. But for us as fanciers it possesses, of course, a particular attraction—largely because the back-yard phase of poultry-keeping is imperfectly understood. In point of fact, I am very certain that the successful back-yard exhibitor makes more money out of his fowls, in proportion to the number he keeps, than does any other class of poultry-keeper. Naturally, the successful exhibitor is rare, and his success is usually the permanent result of long years' experience, unless it is the temporary result of a lucky sitting of eggs.

The average back-yard fancier is completely dominated by his better-favoured rivals. He knows he cannot beat them. He exhibits at his local show, and maybe at other local shows, but he seldom wins. His usual lot is reserve or V.H.C., and then once or twice a second or a third. Show reports often describe his birds as "moderate" or "of little account"; but show reporters do not, as a rule, appreciate the state of affairs. The back-yarder's birds seldom do him anything but the greatest credit, though to realise it one must inquire a little into his methods and conditions of work.

It is not hard to imagine the difficulties of chicken-rearing and of keeping fowls in show condition in the most restricted quarters. I suppose the main principle of the thing lies in vigorous weeding-out from year to year and unremitting attention to cleanliness. Every fowl kept makes a difference; therefore, directly a unit can be dispensed with it must be dispensed with. At the end of the brief breeding season the older and less valuable hens are disposed of and space given to the two or three broods of chickens. Then the question arises, how are chickens to be well grown and maintained in health under such conditions? The secret of that is exercise and sunlight, and if the latter is rare (in our back-yard) the former at least must be assured, and with a little ingenuity and work in spare hours it can be managed all right.

At one time when my own fowls were confined in a cramped earth run partitioned off a kitchen garden, I hit upon a very happy plan for the healthy accommodation of fifteen or sixteen

chickens. I had a wood-shed in which the saw was plied daily, sawdust consequently being plentiful. The front was open, but there were sound roof, back, and sides, and this struck me as a pleasant, suitable spot for my young birds. I cleared the logs out, littered the floor with sawdust to the depth of about six inches, and placed a coop at each end of the shed. Along the front fine-mesh wire netting was fixed so that the chicks could not find their way to the outer world. But on fine, sunny days (it was early spring) I would carry the coops forth to a plot of turf in the lee of a wall, and there the little creatures would sport and grow almost visibly.

Various opinions are expressed as to which is the best breed for the back-yard fancier to cultivate; but I think one cannot do better than stick to the Black Minorca. I suppose more Black Minorcas are to be found in metropolitan suburbs (and in the metropolis itself) than on all the farms in the South of England. It cannot be denied that they fulfil all practical requirements. A good deal of theory is propounded with regard to the qualities of various breeds; but the strong points of the Black Minorca are as a rule accurately described. It is quite the case that this breed is "a layer of large, white-shelled eggs of excellent size, and a fair table-fowl." But I think the chief reason for the adaptability of the Minorca to back-yard conditions is that it is very active and yet very tame; so long as one does not overfeed it, it keeps fit and, more especially, in show condition. A couple of exhibition pens should be put up under cover—in an outhouse, say—and the two or three promising specimens given short periods of training in these. The lobes and colour, of course, must be carefully kept, and it does no harm to a black fowl to be washed four or five days before a show. A white fowl should be washed about thirty-six hours only before it is to be judged; but black plumage requires a day or two in which to recover the sheen. If the cock or hen is kept in an exhibition pen between the washing and the show, it will come out all the finer after the final grooming.

The back-yard fancier is a poor man as a rule, and he cannot afford to pay many entrance fees, railway charges, and subscriptions to clubs. But he is a large and growing element in the Poultry Fancy—which fact should not be forgotten by the specialist clubs.

Where the hen scores.

An American writer in considering the respective merits of cows and hens, summarises it thus:—"The cow must be milked while the business hen milks herself." As a question of labour that is an important factor.

Mr. Joseph Dilworth.

A well-known Canadian poultry breeder, Mr. J. Dilworth, of Toronto, where he acted for some years as Secretary of the Ontario Poultry Association, died in September. He was a Yorkshire man who went out to Canada many years ago.



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These are but a few of the essential features of the Tamlin Incubator, which has stood the test for years, and which are responsible for hatching strong, robust chickens—in all parts of the world—in all climates.

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ARTIFICIAL INCUBATION IN 1683.

The following extract is taken from a book entitled "Two Journeys to Jerusalem." Printed for Nath. Crouch, at his shop, at the Bell, in the Poultry, near Cheapside, in 1683.

At this town named Philbits, we stayed two daies and one night: in which time I went into a house where I saw a very strange secret of hatching Chickens by artificial heat or warmth: the like I had seen before at Grand Cairo, but not in such extraordinary numbers or multitudes as here: the manner whereof I will declare as followeth. The country people inhabiting about this town, four or five miles distant every way, bring their eggs in apt carriage for the purpose, upon asses or camels to this place where there is an oven or furnace purposely kept temperately warm, and the Master or Furner whereof standeth ready at a little door to receive the eggs of everyone by tale; unless when the number rises so high (as to ten camels loading or more) then he filleth a measure by tale, and after that order, measures all the rest. And I tell you this for a truth, that I saw there received by the furner, cook, or baker, in one day by tale, and by measure, the number of thirty-five or forty thousand eggs, and they told me that for three daies space he doth nothing but receive in eggs, and at twelve daies and they come again to fetch Chickens, sometimes at ten daies, and sometimes (but not very often) at seven daies, according as the weather falleth out. Perhaps some two hundred persons are owners of one raungefull, some having two thousand, some one; or more or less as the quantities amount to; the Furner noteth the names and portions of every bringer; and if he chance to have a hundred and fifty thousand, or two hundred thousand (as many times it chanceth that he hath) yet doth he mingle them together, not respecting to whom they severally belong. Then he lays them one by one upon his Raunge, so near as they can lye and touch each other: having first made a bed for them of camels dung burnt; and the place whereon the ashes doth rest is of a very thin matter made of earth, but mixed with the camels dung in the making, and some pigeons dung amongst it: yet herein consisteth not the secret only; for there is a concave or hollow place about three foot breadth under it, whereon is likewise spread another layer of camels dung, and under that is the place where the fire is lighted. Yet can I not rightly call it a fire, because it appeareth to be nothing but embers; for I could not discern it but to be like ashes, yielding a temperate heat to the next concave, and the heat being resisted by the layer of dung next it (which dung being green and laid upon pieces of withered trees, or rather boughs of dead trees) sends forth an extraordinary vapour, and that vapour entreth the hollow concave next under the eggs, wherein pierceth the aforesaid mixed earth, which toucheth the ashes whereon the eggs are laid, and so serveth as a necessary receptacle for all

the heat coming from underneath. This artificial heat glyding through the embers whereon the eggs lye doth by degrees warm through the shells and so infuseth light by the same proportions of heat: thus in seven, eight, nine or sometimes ten daies, life succeedeth by this artificial means. Now when the Furner perceiveth life to appear, and that the shells begin to break, then he begins to gather them: but of a hundred thousand he hardly gathered threescore thousand, sometimes not fifty thousand and sometimes (when the day is overcast) not twenty thousand; and if there chance any thunder, lightning or rain then of a thousand he gathers not one; for then they all miscarry and die. And this it to be remembered withal, that be the weather never so fair, the air pure, clear and everything as themselves can desire, and let the chickens be hatched in the best manner that may be, yet have they either a claw too much or too little. For sometimes they have five claws, sometimes six and some but two before and one behind and seldom very few or any in their right shape, afterwards when the people come to receive their eggs that before had brought them in, the Furner gives to everyone proportionately according as the Furnace yielded, reserving for himself a tenth for his labour. Thus have you the secret of hatching eggs by heat artificial in the town of Philbits in the land of Gozan, which I think were it vain to be practised in England, because the air there is hardly ten daies together clarified, neither is there any camels dung though they have dung of other beasts every way as hot: therefore when the sun is in Cancer, Leo, or Virgo you may if you please try what may be done. Perhaps some will think this to be a story or fable, but to such I answer, I can urge their credence no further than my faith and truth can perswade them, and if they will not thereon believe me let them take pains to make their own eyes a witness and when they have paid as dearly as I have done (for the sight of this and other things cost me a hundred marks in fifty daies) their judgments will be better confirmed.

When does a hen lay?

We have, indeed, much to learn. Mrs. Sarah Erickson, of Falconer, N.Y., has kept chickens for 37 years, says a New York paper, and claims that she has decided exactly the time when a hen lays her egg. Here is her story:—"I have worked out the problem," she declares. "By using marked leg bands, trap nests and alarm clocks attached to the nests I have determined that a hen lays an egg at the same hour, minute and second that she was born, or rather, hatched. For instance, if the hen happened to be able to peck its way through its shell at 7.43 a.m., she will lay an egg at precisely 7.43 a.m. And she will do this without variation every time she is inclined to lay. I have kept close, systematic watch on my hens for five years, and I have never known the rule to fail." We are happy now to know this much. Good Mrs. Erickson!

MRS. WILKINSON

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have been won at the leading Shows by purchasers of her stock and eggs, thus proving she sells, as well as retains, good reliable stock and eggs.

At Crystal Palace Show alone in 1907,
'8, '9, '10, '11,

ELEVEN SILVER CUPS

were won with birds bred from breeding pens and eggs sold, again proving quality of stock and eggs sold.

At the Grand International, Crystal Palace and Club Shows, Mrs. Wilkinson has won an average of 15 Silver Cups, Specials and First Prizes for the last six years.

At the last Crystal Palace Show, 1911,

Mrs. W. won Challenge Cup, seven Firsts, two Second and six Third Prizes, including First Prize for best breeding pen of Buff Orpingtons.

Mrs. Wilkinson was judging at Crystal Palace this year, hence not exhibiting.

Mrs. Wilkinson has won Challenge Cup five times for the best Buff Orpington Cockerel at the Buff Orpington Club Show; in fact, she has won 22 Buff Club Challenge Cups, which is surely a proof of her strain standing supreme.

Mrs. W. has also won Champion Challenge Trophy for best Plymouth Rock, three years in succession, at the Grand International Show.

Recent wins at the Dairy Show (1912)

include White Orpington Pullet, First (73 in class); also Challenge cup for the best White Orpington in the Show; also Societies' Silver Medal for the best Orpington Pullet, all varieties in the Show; Barred Rock Cockerel, First and two Specials; Buff Orpington Cockerel, Reserve; also in Limit Classes, First, Second, Third and Fourth Prizes.

At Haywards Heath Show,

won with White Orpington Pullet, First and Special for best White Orpington; also the Poultry Club Challenge Cup for the best Orpington, any variety in the Show; and with Plymouth Rocks, won two Second and Third Prizes.

At Manchester Show, Oct. 25th, 26th,
and 28th, won as follows:

With Buff Orpingtons, First and two Seconds; White Rocks, First and Gold Medal; White Orpingtons, Second, Third, and Fourth; Barred Plymouth Rocks, Second and Third.

Birds always on sale and Eggs in season.

Birds shipped to all parts of the world. Over 3,000 shipped last twelve months. All freight paid to nearest Port and shipped in the best Coops. Satisfaction guaranteed. A great speciality is made of properly matured breeding pens or trios, hence the wins of her customers noted above.

Three days' approval anywhere in the British Isles. Terms: Cash with order from unknown customers, which will be returned at once if birds not approved of.

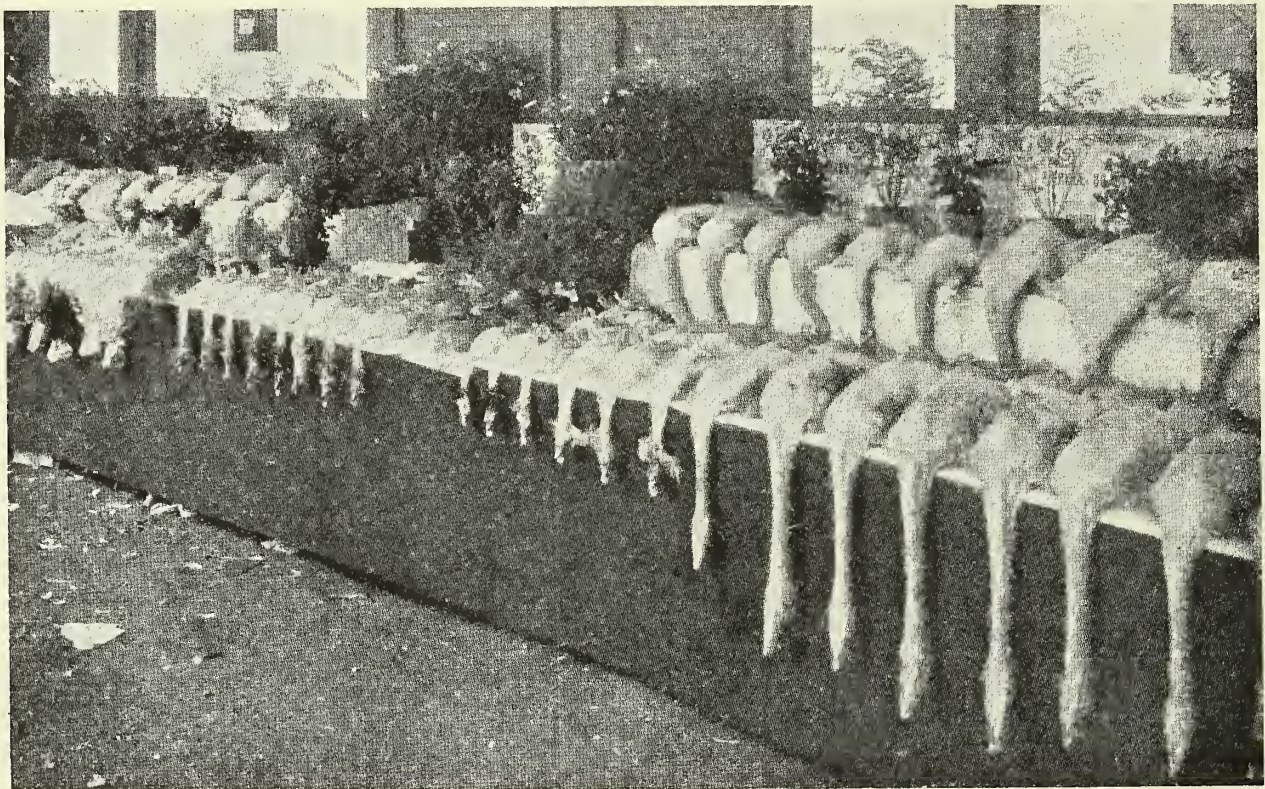
Burrow House, Scotforth, Lancaster.

Telephone—13 GALGATE.

THE CAUSES OF APOPLEXY AMONG POULTRY.

Birds, in that they possess a system of blood circulation as perfect as that of mammals and man, are alike exposed to such disasters as follow any interference with the equable flow of the blood current. Obstruction at any given point of the system will at once lead to engorgement and increased tension right back all along the line of march behind that spot. And just as in the case of a garden hose which bursts on an increased water pressure by the sudden turning on of the supply tap, or from obstruction in some part of its length, so will an augmented blood pressure find out the weak places in the vessels, and these,

been built up, rigid exclusion of the apoplectics from the breeding pen must be maintained. Apoplexy is one of the very few diseases (if, indeed, the term is allowed to be applied to what is in reality a physiological variation) which, strictly speaking, are inherited. And it is not difficult to see how such a peculiar structural variation, appearing suddenly in a strain, though liable to efface itself among animals in their natural state, would be likely to become fixed under domestication and artificial selection. But the inherited weak blood-vessels are only the predisposing cause. The direct causes which lead up to the break include over-feeding, obstruction, and pressure of internal organs by fat, congested state of the liver and kidneys, sexual excitement, and straining to



A foretaste of the Smithfield Dead Poultry Show.

[Copyright.]

giving way, induce the symptoms, always serious, but not necessarily fatal, to which the general term apoplexy is applied. As concerns its occurrence among poultry, the causes may be described as inherent, or incidental, or both. That the apoplectic predisposition is inheritable there can be little doubt. It is no abstract inheritance, but one of a definite anatomical lesion, a structural defect in the walls or lining of the blood-vessels themselves, rendering them prone to break under unusually slight strain. We are all, more or less, familiar with instances in human pedigrees where this undesirable fatality crops up in successive generations. And poultry fanciers, too, meet with it often, especially where line breeding has been closely followed. When observed in a strain, there is only one thing to do. Whatever sacrifice it may involve, however laboriously the strain may have

lay under mechanical difficulties. The young and lusty cockerel or turkey sire may succumb to apoplexy in the breeding pen. His end is generally near to the commencement of the breeding season, when duties are exacting, and he is getting more than his share of food. The old and fat hen may also go the same way. Her demise takes place as a rule at this time of the year when eggs are getting scarcer, and no corresponding decrease has been made, as it ought to be, in her diet. In her case mechanical obstruction of the internal organs by fat is the direct cause.

Nor even is the pullet exempt from this death. It may accompany the strain of an unsuccessful attempt to lay a first egg. The ruptured blood-vessel need not necessarily be one of those in the brain; the ovary and lungs are often the seat of hæmorrhage.

—S. G. HANSON'S— Standard White Leghorns.

*BRED TO LAY.
Noted for Constitution-
al Vigour, Stamina,
Size of Eggs, and
Prolificacy.*

Breeding Hens, two years old, mated to Cockerels. PULLETS NOT USED AS BREEDERS.

*All Stock
and Eggs
sold, only
from the
Farm.*

Breeders of the flock of 402 pullets which laid in

January	...	...	7616
February	...	...	7310
March	...	...	8606

WORLD'S RECORD 23,532

Eggs for Hatching from March to May 5/- per dozen; 35/- per hundred; £15 per 1,000; Cockerels 10/6 and 21/- each.

THE OLD DOWN, BASINGSTOKE.

PRACTICAL PAGES FOR POULTRY KEEPERS.

BY

C. E. J. WALKEY,

*Committee of Utility Poultry Club;
Provisional Committee National
Poultry Institute;
Instructor in Poultry Keeping
Somerset County Council.*

Price 1/- net.

or 1/1 post free.

**R. T. LANG, Ltd., Tudor House, Tudor St.,
LONDON, E.C.**

Table Points and Turkeys that come early to Maturity a Special Feature.

Unrelated Birds for Mating, Showing, or Table, always on Sale.

GAGE HARPER, Mason's Bridge Farm, Raydon, Ipswich, ENGLAND.

(Telegrams and Station: Hadleigh, Suffolk)

Exporter and the Largest Breeder of High-class, Prize-bred Mammoth Bronze Turkeys.

35 years' practical experience, during which time Prizes, Cups, and Medals have been taken at all the leading live and dead Shows in England.

PRICE LIST AND TESTIMONIALS ON APPLICATION.

Over 200 Turkey Hens kept for Stock annually on Mason's Bridge Farm

Day Old Turkey Chicks and Eggs in Season

England's Famous Stud. WHITE ORPINGTONS.

Has won more honours at the Dairy, Palace, and Club Shows, 1908-1911, than any other stud, and more 1sts and Specials in open classes at these events in 1911 than all other studs together; also leading honours America and South Africa, and leading prices for sales.

Has A World-Wide Export Trade. Breeding Stock and Winners supplied to breeders all over the world. Show Birds a Speciality.

Has a Short Leg and deep, low, wide, massive body and neat head the judge of to-day demands, together with great purity of Whiteness.

Utility Birds from £0 7 6; Utility Breeding Pens from £3 10 0; Exhibition Birds from £1 1 0; Exhibition Breeding Pens from £5 5 0

Prolific Layers and splendid table qualities. A profit-earning bird with a splendid demand at the best prices.

MISS CAREY, Toynton, Spilsby.

Buff and White Orpingtons and Faverolles bred.

Pupils received.

QUALITY HILL POULTRY YARDS,

WHERE

**BENNETT'S FAMOUS S.C. RHODE ISLAND REDS
AND**

BARRED PLYMOUTH ROCKS

ARE RAISED

F. A. Bennett, S.C. Rhode Island Reds.

Wm. Z. Bennett, Barred Plymouth Rocks.

Consolidated December 1, 1908.

Write for Prices and Record of Stock.

YARDS NEAR VAN WINKLE LAKE, CANTON, ILL., U.S.A.

When answering advertisements please mention the "Illustrated Poultry Record." It will help you and it will help us.

THE A.B.C. OF POULTRY RAISING.

ATTEND to every duty promptly. This should be the first rule learned by the beginner.

BE on guard against insect enemies and diseases that come from foul odours in the poultry-house.

CULL closely, for this is the shortest road to success. It is what is thrown out as much as what is kept that places the breeder.

DO not waste feed by over-feeding your fowls. This is as bad if not worse than under-feeding.

ENDEAVOUR to keep your young stock growing every minute from the time it is hatched.

FEED only sweet and wholesome feed of every kind. Musty grain, soured mashes, and tainted meat lead to disease.

GET good stock to begin with and try to improve it every year. Good stock is always good, poor stock holds back success.

HENS should not be allowed to run with male birds except during the hatching season.

IMPROVEMENT comes from thoroughness in every department of the work of the poultryman.

JUST a little more care often means the difference between profit and loss in the poultry yard.

KINDNESS in the poultry yard pays better than anything else. Even good feed will not make up for unkindness to fowls.

LICE and mites come early and go late if they are allowed to take their own course. Watch for them every day in the year.

MANY a poultryman has failed because he gave up just as he learned how to succeed.

NO one variety is the best. The variety which you like best is likely to be the one you will be the most successful with.

ONLY the best blood should be used. On this depends making the poultry business O.K.

PULLETS should be forced forward as rapidly as possible. Separate the cockerels from them at an early age.

QUICKLY dispose of the hens that do not pay their way. They are robbers and reduce your profits.

REMEMBER that overcrowding should be avoided. Fifty hens with plenty of room will pay better than 150 crowded.

SELECT your very best birds for your own breeding. The man who sells his best sells what he will find hard to replace.

TRAP-NESTS will select your best layers for you, and when you know which hens are producing the eggs the rest is easy.

UNTIL you learn to be patient you will not attain to the full measure of success. Slow but sure is the safe road to follow.

VIGOROUS cockerels should be selected and kept by themselves for the breeding pens of next year.

WHEN a poultryman thinks he knows all there is to learn about keeping poultry he is on dangerous grounds.

XCEPTIONAL results are secured only by exceptionally good care in every respect.

YEAR-OLD males should be mated with two-year-old hens for the best results. Never mate year-old birds together.

ZEAL and earnest endeavour are the things which accomplish everything worth trying in this world. This is true of poultry.

—Poultry (U.S.A.)

THE GAME FOWL OF OLD ENGLAND.

To the Editor of the Illustrated Poultry Record.

Sir,

If "Common-Sense Humanitarian" had chosen any other *nom de plume* than that one I might have been drawn into proving the truth of those statements of mine to which he so objects. But in the first place I never reply to anonymous critics, unless the circumstances are exceptional. And, secondly, I know full well that the average "humanitarian" (so much the worse for the cause) is so hide-bound with the trappings of a bigoted sentimentality that to attempt to argue with him or her is waste of time. When a person persists in sticking to his own narrow pin-hole view of a subject with his back against a stubborn wall of unreasoning dogmatism it is useless to invite him into the open for a clash of spurs, for he will not come. Some of us remember a sorry display of this sort of valour in the dubbing controversy of some years ago. Hence, in spite of "Common-Sense Humanitarian's" qualifying adjective (I give him credit for the promising distinction) I steer clear of him and all others who imagine they are the only arbiters of justice in the cause they have elected to promote. The last few lines of my critic's letter are fairly characteristic of the "common-sense" utterances which issue from the lips of his self-chosen kind.

Yours, etc.,

Nov. 15th, 1912.

A. T. JOHNSON.

Encouragement needed.

It seems to me that something more tangible to the rural population than gold medals is wanted if the man on the land is to take up poultry in an earnest fashion. The farmer's mind has been imbued for generations with the idea that poultry will not pay, and what he has been taught for so long will take him a long time in unlearning. The efforts of the Government should, therefore, be directed with force to the younger folk. If encouragement were given to them for keeping poultry in a suitable manner, and for the birds of their own breeding, some good might be attained.

The Illustrated Poultry Record Series

OF

LANTERN SLIDES.

THE SLIDES ENUMERATED BELOW CAN BE SUPPLIED FOR 1/- EACH.

FEEDING.—A1. Value of Elements.—A7. Food Consumption.—A3. Feeding-Pen for Chickens.—A2. Feeding-Trough.—A4. Bottle Fountain.—A5. Metal Fountain.—A6. Feeding-Block for Chicks.—A8. Feeding-Pen for Ducklings.

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ARTIFICIAL REARING.—A27. Brooder-House Exterior (Theale).—A150. Brooder-House Interior (Theale).—A159. Brooder - House Interior (Theale).—Hearson Brooder, Exterior.—Hearson Brooder, Interior.—A28. Portable Pipe Brooder (2).—A29. Portable Pipe Brooder Runs.—A156. Brooder-House Interior (Pipes).—A162. French Brooder-House.—193. Small Brooder-House (American).—192. Brooder-House, Runs.—A157. English Small Brooder-House.

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APPLY TO

The Illustrated Poultry Record,

TUDOR HOUSE, TUDOR STREET, E.C.

TABLE OF PRICES REALISED FOR HOME, COLONIAL, AND FOREIGN POULTRY, GAME, AND EGGS FOR THE FOUR WEEKS ENDING NOVEMBER 16, 1912.

ENGLISH POULTRY—LONDON MARKETS.

DESCRIPTION.	1st Week.	2nd Week.	3rd Week.	4th Week.
	Each.	Each.	Each.	Each.
Surrey Chickens ..	2/9 to 3/6	2/6 to 3/3	2/9 to 3/6	2/3 to 3/6
Sussex ..	2/9 " 3/6	2/6 " 3/3	2/9 " 3/6	2/3 " 3/6
Boston ..	1/9 " 3/0	1/6 " 2/6	2/3 " 3/0	2/3 " 3/0
Essex ..	2/0 " 3/3	1/9 " 2/9	2/3 " 3/0	2/3 " 3/3
Capons ..	4/6 " 6/0	4/6 " 5/6	4/6 " 5/6	4/6 " 5/6
Irish Chickens ..	1/6 " 2/6	1/4 " 2/4	2/0 " 2/6	1/9 " 2/6
Live Hens.....	1/6 " 2/3	1/6 " 2/0	1/6 " 2/3	1/6 " 2/3
Aylesbury Ducks	2/6 " 3/0	2/3 " 3/3	2/3 " 3/3	— " 3/6
Ducks ..	2/3 " 2/9	2/2 " 2/9	2/3 " 2/9	2/9 " 3/6
Goslings per lb.....	7 " 8	7 " 8	7 " 8	6 " 6½
Turkeys, English ..	9 " 10	9 " 10	9 " 11	8 " 10

ENGLISH GAME—LONDON MARKETS.

DESCRIPTION.	Each.	Each.	Each.	Each.
	Each.	Each.	Each.	Each.
Grouse (Brace) ..	2/3 " 2/6	1/6 " 2/3	2/0 " 2/6	2/0 " 2/6
Partridges.....	1/6 " 2/0	1/3 " 1/9	1/9 " 2/3	1/9 " 2/3
Pheasants.....	2/0 " 3/0	2/0 " 2/6	1/9 " 2/6	1/9 " 2/6
Black Game.....	2/0 " 2/6	2/0 " 2/6	2/0 " 2/6	2/0 " 2/6
Hares.....	2/0 " 3/0	2/0 " 2/9	2/6 " 3/0	2/6 " 3/0
Rabbits, Tame.....	1/0 " 1/9	1/0 " 1/6	1/0 " 1/9	1/0 " 1/9
" Wild ..	8 " 10	8 " 11	8 " 11	8 " 11
Pigeons, Tame.....	—	—	—	—
" Wild ..	—	—	—	—
Wild Duck ..	1/3 " 1/9	1/6 " 1/8	1/6 " 2/0	1/6 " 2/0
Woodcock ..	—	—	—	—
Snipe ..	—	—	—	—
Plover ..	—	—	—	—

ENGLISH EGGS (Guaranteed New-Laid).

MARKETS.	Per 120.	Per 120.	Per 120.	Per 120.
	Per 120.	Per 120.	Per 120.	Per 120.
LONDON ..	14/- to 16/-	14/- to 16/-	16/- to 18/-	16/- to 18/0
Provinces.	Eggs per dozen.	Eggs per dozen.	Eggs per dozen.	Eggs per dozen.
CARLISLE ..	1/6	1/7	1/9	2/0
BRISTOL.....	1/5	1/4	1/6	1/7

FOREIGN POULTRY—LONDON MARKETS.

COUNTRIES OF ORIGIN.	PRICES REALIZED DURING THE MONTH.			
	CHICKENS. Each.	DUCKS. Each.	DUCKINGS. Each.	GEESSE. Per lb.
Russia ..	—	—	—	—
Belgium ..	—	—	—	—
France.....	—	—	—	—
United States of America ..	—	—	—	—
Austria ..	—	—	—	—
Canada ..	—	—	—	—
Australia.....	—	—	—	—

IMPORTS OF POULTRY AND GAME. MONTH ENDING OCT. 31ST, 1912.

COUNTRIES OF ORIGIN.	DECLARED VALUES.	
	Poultry.	Game.
Russia ..	£2,253	£4
France ..	£483	£8
Austria-Hungary ..	£408	£48
United States of America ..	—	—
Other Countries.....	£3,486	£5,794
Totals.....	£6,630	£5,854

IRISH EGGS.

DESCRIPTION.	1st Week.	2nd Week.	3rd Week.	4th Week.
	Per 120.	Per 120.	Per 120.	Per 120.
Irish Eggs.....	13/6 to 15/0	13/6 to 15/0	13/6 to 15/0	14/0 to 16/0

FOREIGN EGGS.

DESCRIPTION.	1st Week.	2nd Week.	3rd Week.	4th Week.
	Per 120.	Per 120.	Per 120.	Per 120.
French ..	14/0 to 16/0	14/0 to 16/0	14/0 to 16/0	15/0 to 17/0
Danish ..	13/0 " 14/0	14/0 " 15/0	14/0 " 15/0	15/0 " 16/0
Italian ..	11/9 " 13/0	11/9 " 13/0	12/9 " 14/0	13/3 " 15/0
Austrian ..	8/9 " 11/6	8/9 " 11/6	9/0 " 12/0	9/0 " 12/0
Russian...	7/9 " 10/0	7/9 " 10/0	8/3 " 10/3	8/9 " 10/6

IMPORTS OF EGGS. MONTH ENDING OCT. 31, 1912

COUNTRIES OF ORIGIN.	DECLARED VALUES.	
	Quantities in Gt. Hund.	Declared Values.
Russia.....	1,538,939	£683,883
Denmark ..	454,681	£267,962
Germany ..	47,792	£19,829
Netherlands ..	51,632	£26,006
France ..	39,769	£20,292
Italy.....	34,448	£18,950
Aust.-Hungary ..	65,122	£26,976
Other countries	71,853	£34,204
Totals	2,304,236	£1,098,102

AT THE 1912 DAIRY SHOW Stainthorp's Chicken Foods

PROVED TO BE THE

Champion Food ^{on} the Market

In the other section of Fancy Poultry as usual a good share of the Cup Winners were reared and fed on our Foods,

It is the same in every line of life, and that is why Stainthorp's Chicken Foods are so superior to other makes. Stainthorp has concentrated his attention on Poultry and their requirements. He has been judge at the principal poultry exhibitions for many years. For thirty years Poultry has been his "fad," and he has manufactured Chicken Foods, the product of these years of careful study and experience.

Stainthorp knows exactly what an exhibition specimen should be, but better, he has discovered how to bring out those qualities which bring home the Cups and First Prizes. Experts acknowledge that correct feeding from Chickhood is the chief rung on the ladder of the successful Poultry Keeper. Successful men speak of Stainthorp's Foods as having no rival. It is just a matter of knowing why you should rely on a certain food. It is obvious that Stainthorp must know what is the best for poultry, better than manufacturers who have not really studied the question. He has judged 974 shows.

TO GET YOUR FOWLS PERFECT OUTSIDE YOU MUST FIRST GET THEM PERFECT INSIDE.

Two remarkable Letters just received from two of the foremost Champions of the day—

R. Stainthorp, Esq.

Honeycott, Hawes.

April 13th, 1912.

DEAR SIR,

Please send me next week 10 cwt. of your Champion Chicken Meal and 1 cwt. Biscuit Meal. We are rearing our chickens this year entirely on your meal with a little wheat after the first fortnight. At the present date we have close on 900 chickens that have had your meal four times per day, and a healthier lot we never owned. 187 are January hatched.

Yours sincerely,

J. WHARTON.

R. Stainthorp, Esq., Darlington.

Quarry Farm, Pool, Leeds, April 3rd, 1912

DEAR SIR,

Enclosed please find cheque in settlement of your account for chicken meal. I should also be glad if you would put on rail at once a further 6 cwt. addressed to Pool Station, N.E. Rly. I cannot find anything to beat it. Have used it extensively this season, and never had fewer losses and never had Chickens grow and feather so well. I think it is an ideal food and most economical.

Yours faithfully,

FRED. TOOTILL.

PRICES OF MY SPECIALITIES:

	Cwt.	½ Cwt.	¼ Cwt.		Cwt.	½ Cwt.	¼ Cwt.
	s. d.	s. d.	s. d.		s. d.	s. d.	s. d.
Champion Chicken Food ...	16 0	8 6	5 0	Special Biscuit Meal for Poultry ...	16 0	9 0	5 3
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American Mammoth Bronze

TURKEYS.

WINS, 1911.

Brussels—1st and Prize of Honour, Cock. Brussels—1st and Prize of Honour, Hen. Staffordshire County—1st and 2nd. Watton—1st. Hen. Dairy Show—3rd. Framlingham—2nd. Crystal Palace—1st, two 3rds, 4th and Reserve for Challenge Cup.

WINS, 1912.

Bath & West ..	..	..	..	Cock, 1st	Hen, 3rd
Royal Counties ..	..	..	..	.. 2nd	.. 3rd
Royal Agricultural Society ..	..	..	..	.. 1st	.. 1st
Staffordshire Agricultural Soc.	..	..	..	.. 1st	.. 1st
Wayland Agricultural Society 4th	.. 2nd, 3rd
Dairy Show 1st	.. 2nd
Norwich 2nd	.. Reserve

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TRADE EXHIBITS AT THE CRYSTAL PALACE SHOW.

The number of trade exhibits made by poultry appliance manufacturers at the Grand International Show held at the Crystal Palace increases year by year, so much so, that the available space at the disposal of the Committee is becoming sorely taxed. The exhibits were as usual most attractive and were thoroughly inspected by the large number of visitors who attended. Amongst notable poultry food exhibits were those of Messrs. J. Ashby & Son of Brixton; Brand & Co., Ltd., Vauxhall, S.W.; W. Brinkler & Sons, Clapham; W. G. Clarke & Sons, Limehouse, E.; the manufacturers of "Vigam Rusks"; Gould Bros., Bow Bridge, E.; B. C. Hart, Forest Hill; Imperial Foods Co., Peckham; "Lasco" Ltd., Carruthers Street, Liverpool, who reported that their famous "Lasco" laying meal was being taken up by all the well-known poultry breeders throughout the country for egg production; Liverine Ltd., Grimsby; Molassine Co., Ltd., Greenwich; Osborne & Young, Ltd., Brixton; Spratts Patent Ltd., Fenchurch Street, E.C., whose foods are two well known to need eulogy; "Phosto" Co., Emsworth, Hants; Stiles & Crowley, Heathfield; and Albion Thorpe & Sons, Rye, makers of the world renowned "Cock of the Walk" poultry meal.

Poultry foods also formed part of the exhibits made by Messrs. Abbot Bros., Thuxton, Norfolk; William Cook & Sons, Orpington House, St. Mary Cray, Kent; William H. Cook, Ltd., Model Poultry Farm, Orpington; Finch & Fleming, Ltd., Flitwick, Bedfordshire, and Cypher's Incubator Co., Finsbury Pavement, E.C.

The Allen Poultry Co., Ltd., Sawbridgeworth, Herts. were represented by a very attractive stand where the claims of "Mustard for Poultry" were extolled by Captain Allen and his energetic assistants.

Chipmans, Ltd., of Staines, who have built up a big reputation for lampless foster mothers, were showing examples of their appliances which recently secured the silver medal at Manchester.

T. Craven & Sons of Corporation Street, Manchester had as usual a very comprehensive display which included a variety of appliances ranging from comb-guards to exhibition hampers and incubators.

Cypher's Incubator Co., of Finsbury Pavement, London had a complete line of their well-known appliances including the Cypher's Incubators and Brooders in all sizes on view.

An extremely interesting and instructive exhibit was that of **Mr. A. Dinsley, the poultry pathologist of 10, Essex Street, Strand**, who in addition to showing his many remedies for poultry had a large number of microscopic photographs dealing with the diseases of poultry and the chick embryo.

Finch & Fleming Ltd., Flitwick, Bedfordshire, showed the "F. & F." hot air incubators and foster mothers and the Norwich Automatic Feeder, the latter a very attractive and useful appliance. The firm is also manufacturing a fireless brooder.

F. R. Gwynne of the Forest Poultry Farm, Newland, Coleford, Gloucester had an ingenious drying machine for exhibition poultry in addition to several other appliances of value to poultry keepers.

Gloucester Incubator Co., Gloucester had on view all the many appliances they manufacture, including incubators, foster mothers, etc. This firm's many improvements in poultry appliances were referred to in our November number to which we would draw our readers' attention.

Harry Hebditch, Martock, Somerset. The popularity of Mr. Hebditch's appliances increases daily because they are so well made and reasonable in price.

He had on view several examples of the many houses, coops, runs, etc., he manufactures in addition to his "Hebditch" Incubator and "Lorna Doone" Foster Mother. For his bone cutter, the bronze medal (highest award) was secured.

There can be no disputing the fact that the feature of the whole exhibition was the remarkable display of intensive appliances made by **Randolph Meech of Poole, Dorset**. For novelty, it was indeed a "staggerer" to all who visited the Palace. Mr. Meech is never half-hearted in anything he undertakes as his advocacy of the latest system of poultry keeping goes to prove. We are given to understand that no less than 300 hens were shown in the two "intensive" houses he had on exhibition, whilst some two hundred head of growing stock was housed in his newest appliance, the name of which we cannot recall at the moment, but which took the form of a block of two compartment flats for chickens, the whole forming a series of fireless brooders. In addition, Mr. Meech had his usual extensive display of poultry appliances of the older and more familiar type.

Robert Miller, Stirlingshire Poultry Farm, Denny, Scotland, made his bow to "Palace" visitors, many of whom were intensely interested in his incubators and brooders which are so highly prized amongst poultry keepers in the North and which have only to become better known "down South" to be generally used.

The Morland Appliance Co., of Crawley, Sussex, had a very interesting little stand and some extremely useful examples of their wares were on show.

A. E. W. Phipps, Midland Works, Harborne, Birmingham, in addition to showing his well-known "Perfection" Incubators and foster mothers made a feature of intensive appliances about which he has become very enthusiastic. The "Binley" Intensive house to hold two hundred head of laying hens was the attraction of his stand. This is a well-made structure which should be much in demand by those who contemplate adopting the new system of poultry keeping.

Spratts Patent, Ltd., 24 and 25 Fenchurch Street, E.C., were of course greatly in evidence. Their appliance for poultry are world renowned and of course the Hearson incubators and foster mothers, etc., were features of their exhibit.

Amongst other appliances shown were those of **Arthur Neverson, Peakirk, Peterboro'**, **G. B. Sharp, Newtown, near Kirkham** and **W. F. Snell, Yeovil, Somerset**.

The poultry medicine, tonic, disinfectant trades, etc., were represented by such well-known firms as **Dixons of Hansworth, Birmingham**, **P. Proud and Son, Birkdale, Southport**, **B. C. Tipper and Sons, The Veterinary Chemical Works, Birmingham**, **W.A. Jeals, Hounslow**, and **Jeyes, Ltd., London, E.C.**

The medals and awards offered by the International Poultry Show Committee for meritorious appliances in competition, the judging of which was in the able hands of Mr. J. Pettipher, were allocated as follows:—Hot-air incubator, (4 entries) silver medal, **A. E. W. Phipps**,—award of merit, **H. Hebditch**, **G. B. Sharp**, **Finch and Fleming, Ltd.** Hot-air incubator (3) silver medal, **A. E. W. Phipps**; a.o.m., **T. Craven & Son**. Rearer, (7) silver medal, **A. E. W. Phipps**; bronze medal, **W. F. Snell**; a.o.m. **H. Hebditch**, **Finch & Fleming, Ltd.**, **Morland Appliance Co.** Poultry or Pigeon House (11) silver medal, **G. B. Sharpe**, intensive poultry house; bronze medal, **W. F. Snell**, portable poultry house; a.o.m. **H. Hebditch**, **W. F. Snell**, **A. E. W. Phipps**, **Morland Appliance Co.** Novelty (9) silver medal, **W. F. Snell**, broody coop for fitting to a fowl house; a.o.m. **H. Hebditch**, **W. F. Snell** (2), **G. B. Sharpe**, **A. E. W. Phipps**. Bone-Cutter (2) bronze medal, **H. Hebditch**, a.o.m. **T. Craven & Sons**.

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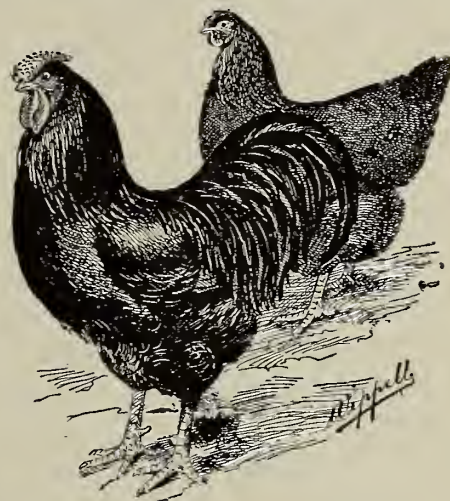
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TRADE ITEMS.

The value of Phosphates for Turkeys.

Poultry-keepers are slowly becoming alive to the value, or rather the necessity, of suitable phosphates in the dietary of their birds. Of course, the leading experts have in some form or other, for many years past, devoted attention to this point, and have recognised the fact that most foods and many soils are deficient in the particular phosphates that are so conducive to the well-being of their stock, young and old. It was first proved by American investigators that the influence of a meat diet compared with vegetable food was mainly, if not entirely, due to the mineral ash of the meat, which contains a large proportion of phosphates, rather than to any difference in albumenoid or nitrogenous composition. For frame-building and egg-production, it has been abundantly proved that a proper proportion of certain phosphates are of immense importance. But there is a further very interesting point that has not yet by any means been fully appreciated, and this is the peculiar effect of a phosphatic diet upon the whiteness and flavour of the flesh of table birds, and of turkeys in particular. Wright, in his book of Poultry, laid his finger on this point when he explained that the value of Sussex Ground Oats was very largely due to the influence of the mineral ash of the oat, which contains a considerable amount of phosphoric acid. Recently several interesting experiments have been made in this country with the addition of suitable phosphates to the food of fattening chickens and turkeys. The results in respect of whiteness and quality have been very surprising.

To turkey breeders these considerations are of more than usual importance, because no birds are more difficult to rear in their early stages, not only in respect to leg weakness, but also during feathering. Now suitable phosphatic diet is of immense value in the early stages, promoting bone formation, general health, and rapid feathering. Also for whiteness of flesh their influence is truly remarkable, and, as all turkey breeders know, it is the whiteness of the flesh that tells on the market value. We know of no preparation of phosphates so effective as those produced under the name of "Phosto," by the "Phosto" Co., Emsworth, Hants, and "Phosto" is well worth the serious attention of our readers.

Exportations.

During the past few weeks William Cook & Sons have shipped a large number of birds abroad including the following:—

To Algoa Bay, per s.s. "Galacian" two trios of Black Minorcas, to Moscow by express route, a trio of White Wyandottes, to Rio de Janeiro via Liverpool, five Plymouth Rock cocks and seven pullets, two White Orpington cocks and six pullets, one pen of White Wyandottes, one pen of Buff Orpingtons, four Black Orpington pullets, two trios of Indian Runners, and one trio of Cayugas, to France per express route, a trio of White Wyandottes, to New York, per s.s. "Minnetonka" three pens of Buff and six pens of White Orpingtons, to Colombo, s.s. "Tango Maru" a trio of Black Orpingtons, to Mombaza, per s.s. "Prinze Regent" three Rhode Island Red cockerels, to Mombaza, per s.s. "Carisbrooke Castle" two Buff Orpington cockerels, to New York, per s.s. "Minneapolis" three pens each of Blue and Black Orpingtons and two White Orpington cockerels, to Switzerland per express route three Partridge Wyandottes, seven Minorca and six Buff Orpington pullets, to France by express route, two Minorcas, to Rio de Janeiro, via Liverpool, two Rhode Island Red cocks and six pullets, to Russia by express route a pen of White Leghorns and a Buff Orpington cockerel, to Germany by express route, a pen each of Indian Game, Rhode Island Reds and Blue Orpingtons, to Cape Town per s.s. "Saxon" one Pekin drake and a pen of Buff Orpington ducks, to France by express route, two Langshan cockerels, to Russia, a pair of Black and a pair of White Orpingtons, to Canada,

through Wells Cargo Express Co., per s.s. "Montcalm" a pen of Buff Orpingtons, to Russia by express a pair of Black Orpingtons, to France by express, three Indian Runner ducks, to South Africa two pens of White Wyandottes, to New York, per s.s. "Minnewaska" one Black Orpington cockerel and a pen of Jubilees, to Calcutta per s.s. "Glamorganshire" two pens of Plymouth Rocks two White Leghorn cockerels, six Black Langshan pullets, and two Turkey cockerels, to Kingston, Jamaica, per s.s. "Sphæriod" one pen of Buff Orpingtons, to Barcelona, Spain, per s.s. "Gravina" two pens of White Wyandottes, to Rio de Janeiro per s.s. "Labuan" four pens of Black Orpingtons, to France by express a pair of Scotch Greys, to Russia by express, a Langshan cockerel, to Buenos Aires per s.s. "Amazon" a trio of Buff Orpingtons, to Montevideo by s.s. "Arlanza" a pen of White Wyandottes, to New York by s.s. "Mesaba" three pens each of White, Buff and Blue Orpingtons, to Secondee per s.s. "Banana" a pen of Buff Orpingtons, to Boston, Mass., per s.s. "Anglian" 4 Blue Orpington hens, to Talcahuana per s.s. "Corcovado" a pen of Plymouth Rocks, to Madeira per s.s. "Balmoral Castle" ten White Leghorn pullets, to Buenos Aires per s.s. "Brittany" two trios of Indian Game and a trio of White Turkeys, to Rio de Janeiro by s.s. "Spenser" a pen each of Black and White Orpingtons, and trios of Black Orpingtons, to Switzerland by express, a pen of Blue Orpington ducks, to France by express, a Buff Orpington, White Leghorn and Minorca cockerel, to Calcutta per s.s. "Montgomeryshire" two pens of Rhode Island Reds, to Germany by express, two Buff Orpington pullets, to Portugal per s.s. "Britannia" a Buff Orpington cockerel and a Buff Orpington drake, to Durban, per s.s. "Kildonan Castle" a pen of White Orpingtons.

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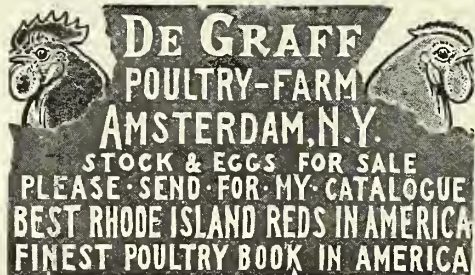
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